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ABSTRACT

The Experimental Model for Teacher Education was implemented during the academic year 1969-70. Its major objective was to build a field-based program using predefined behavioral objectives and their accompanying performance criteria with an instructional program integrating theoretical knowledge with practical experience. Twenty trainees were selected for the program on the basis of grade-point average and a personal interview. Administrative arrangements were made to allow program participants to take their professional courses on a pass-fail basis. Seminars were coordinated with concurrent classroom experience at progressively increasing levels of responsibility in three types of school: inner-city, urban, and suburban. Cooperating teachers in these schools were designated "clinical associates" and provided with inservice training. Of the 20 trainees, 17 completed the program successfully and were certified. Of these, 12 had obtained teaching positions as of June 1970. Detailed recommendations for program improvement include closer involvement of cooperating schools, previous rather than concurrent training of clinical associates, and involvement of trainees in developing objectives and criteria. (The report includes sequence charts of program development and lists of sample performance objectives and evaluation criteria.) (RT)

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EVALUATION OF A PERFORMANCE-BASED PROGRAM IN TEACHER EDUCATION: RECOMMENDATIONS FOR IMPLEMENTATION

by

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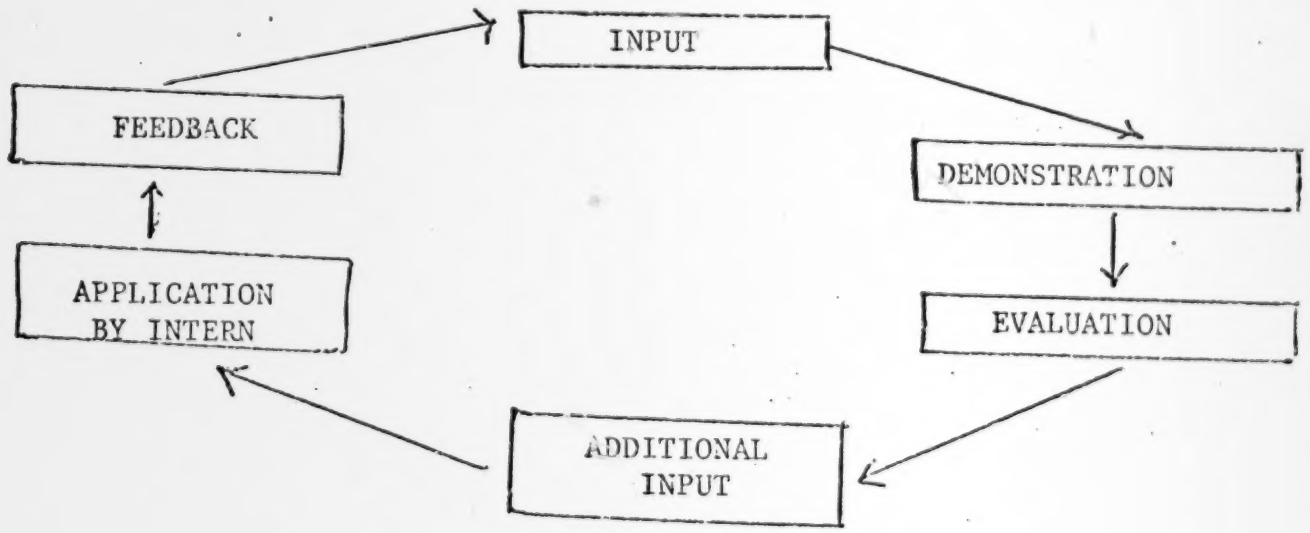
PREFACE

This manual will describe the Experimental Model for Teacher Education, a program designed for the preparation of beginning teachers. This program was effected during the academic year 1969-70. Implementation of recent trends in teacher education represented its focus. The manual will also present some recommendations and guidelines for the development of programs seeking to implement these recent trends. It is especially directed to those persons in teacher education who hold leadership roles in the operation of field-based and performance-based programs. It is our hope that these guidelines will help teacher educators capitalize on the strengths of such programs and avoid some of the pitfalls.



CYCLE OF A PERFORMANCE-BASED PROGRAM

Introduction

BACKGROUND OF THE EXPERIMENTAL MODEL FOR TEACHER EDUCATION

In its third year, the TTT Project (formerly the Tri-University Project in Elementary Education) based at the University of Washington, focused its knowledge and experience on teacher education. To implement this goal, the Experimental Model for Teacher Education was developed.

This model was, in effect, a program for the training of prospective and inservic teachers. Its first goal was to incorporate some of the salient characteristics of the programs in teacher education that had been created by nine different teacher education institutions with the support of the Bureau of Research of the U. S. Office of Education. Certain characteristics appeared consistently in most of these nine teacher education models. Some of these common characteristics are defined in the following statements.

Teacher education programs are characterized by a wider range and longer period of field-based teacher preparation experiences.

This feature permits prospective teachers to gain most of their professional preparation experiences directly in public and/or private schools. Field-based preparation experiences generally include more than the traditional single term of student teaching. Rather, they permit an increased number of contacts with children prior to a full-time student teaching experience. Early in the program prospective teachers serve as teacher aides and teaching assistants and have opportunities to work with children in a variety of ways that support the classroom teacher's efforts.

Later, these prospective teachers assume limited teaching responsibility for a few hours of classroom instruction per week. Subsequently, they direct learning in a specific strand of the curriculum such as reading, mathematics, or language arts. Only after they have completed their experiences as teacher aides, teaching assistants and part-time teachers do they engage in a more extensive full-time teaching experience.

New teacher education programs emphasize performance as the criterion for measuring teaching effectiveness.

In these programs, academic learnings have significance only as they contribute to the classroom performance of the prospective teacher. Skills or tasks are other terms that are frequently used synonymously with performance. Such programs are characterized by a definition of performance objectives. Both the objectives and criterion tasks are stated in precise terms that permit some degree of quantifiable measurement. For example, the Georgia Education Model stipulates that the following performance specification will be demonstrated by the prospective teacher at the analysis level of the Bloom Taxonomy: 3.19.05 Evaluation of pupils through observation.[1]

> This objective specifies that the prospective teacher will be able to apply observational evaluation techniques to classroom learning and demonstrate knowledge of these techniques at the analysis level of the Bloom taxonomy. The analysis level implies that the prospective teacher will be able to identify the elements, relationships and organizational principles underlying these observational techniques.

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[1] "Georgia Educational Model Specifications for the Preparation of Elementary Teachers," Final Report, Project No. 8-9024 Grant No. OEC-0-089024-3311 (010), University of Georgia, October, 1968; p. 132.

Although objectives such as the one above may not meet all the criteria established by Mager[2], they represent a substantial effort in the teacher education field to move toward greater precision than is found in the objectives defined in more traditional teacher education programs. One traditional example follows:

> The prospective teacher promotes instructional interaction:
>
> 1. Maintains consistent, effective classroom regulations.
> 2. Recognizes and controls learner disruptions.
> 3. Maintains physical environment conducive to learning.
> 4. Uses instructional materials and equipment effectively.

The nine Office of Education models provide training specifications for a range of school positions that encompass preparation for professional service as a teacher aide, teaching assistant, teacher, curriculum specialist, teacher trainer and administrator.

To illustrate, the Conceptual Design developed by the Teacher Education Project at the University of Toledo identified six target populations. These populations were preservice preschool and kindergarten teachers, preservice elementary teachers (grades 1-8), inservice teachers at all levels, college and university personnel (the trainers of teachers,

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[2]Robert F. Mager, Preparing Instructional Objectives, Palo Alto, California: Fearon Publishers, 1962.

administrative personnel (principals and supervisors in elementary schools) and supportive personnel (para-professionals and teacher aides).[3]

Some of the nine models provide for a tighter integration between theoretical knowledge in curriculum, educational psychology, and activities for learning and strategies for teaching.

Instead of academically designed courses in which the prospective teacher merely studies the body of knowledge related to one specialty within education, informal seminars attempt to apply a particular body of knowledge to the school setting. Optimally, such seminars take place in the school and allow the prospective teacher to relate seminar discussions immediately to his classroom observations and experiences.

Although the nine models in teacher education have other pervasive characteristics, the Experimental Model for Teacher Education focused chiefly on the four points identified above.

In summary, the objectives of the model were to build a field-based program; to focus professional preparation on predefined behavioral objectives and their accompanying performance criteria; to provide professional preparation for a wide range of educational personnel (prospective teachers, inservice teachers and trainers of teachers); and to provide instruction that more closely integrates theoretical knowledge with the day-to-day experiences of those persons receiving professional preparation. In these several ways, national efforts in teacher education influenced the nature of the Experimental Model for Teacher Education.

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[3]George E. Dickson, "Educational Specifications for Teacher Education," The University of Toledo/College of Education/Educational Comment, 1969.

A second goal of the Experimental Model for Teacher Education was to implement a teacher education program consonant with the Standards for Preparation of School Professional Personnel Leading to Certification.[4] This document was developed by the Office of the Superintendent of Public Instruction in the State of Washington and is usually referred to as the Fourth Draft. It defines two provisions for improved teacher preparation programs. The first provision emphasizes preparation experiences that are related to a variety of specialized professional roles. The second provision delineates the increased responsibility for school districts in teacher preparation. "Colleges and universities will continue their major role in basic preparation. They will have an increased responsibility to collaborate with schools and professional associations in the intern and continuing phases of career preparation."[5] The Fourth Draft also outlines four forms of certificates that may be issued. These include a "preparatory" certificate that authorizes preparatory experiences with children, an "initial" certificate authorizing initial school service in a particular role as a staff intern, a "continuing" certificate that authorizes school service on a continuing basis and a "consultant" certificate for those who qualify for roles that contribute to professional preparation and to the improvement of instruction. This differentiation in certification requires that professional training programs target their efforts toward the four distinct professional roles.

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[4]Statement of Standards for Preparation of School Professional Personnel Leading to Certification. State of Washington, Olympia, Washington, April, 1968, iii.

[5]Ibid, p.

The conditions specified in the Fourth Draft of the State of Washington considerably overlap some of the pervasive characteristics of the nine teacher education models. The emphasis that the Fourth Draft places on performance as a measure of teacher effectiveness is consistent with the performance-based programs found in each of the nine models. Also, the expansion of the school's responsibility for teacher preparation is consonant with those teacher education programs that are predicated on an increased proportion of field-based experiences for the prospective teacher. Finally, the differentiation of certification forms defined by the Fourth Draft is supported by such national programs as the University of Toledo Model that provides preparatory sequences for specialized personnel in the elementary school.

The Experimental Model for Teacher Education - Objectives and Personnel

Objectives

In light of the directions specified in both the Fourth Draft and the nine Office of Education teacher education models, the following objectives were developed for the Experimental Model for Teacher Education. This program would:

1. Provide an increased number of field-based experiences for each of the groups receiving training.

2. Develop and implement behavioral objectives for prospective teachers that would be accompanied by performance criteria permitting measurement of teacher effectiveness.

3. Train prospective teachers, cooperating teachers and prospective trainers of teachers.

4. Arrange applied seminars for prospective teachers. These seminars would permit immediate application of the theoretical knowledge in education to classroom experiences.

This program tried to develop minimal performance competencies for prospective teachers. As a result of participating in a one-year training program, these prospective teachers would be able to sequence learning activities for instruction in the elementary school, manage classroom conditions for optimal learning, relate school and classroom practice to a body of theoretical knowledge and participate actively in the decision-making process of the school.

The following model was developed to implement these overall objectives: (see Figure One). The model is predicated on the assumption that teacher training can be logically divided into three phases: The first is a pre-instructional phase that gives attention to skills in classroom management and human relations as well as the attainment of certain teacher behaviors that are viewed as basic to the teaching-learning process. The second is an instructional phase that focuses on the teaching-learning process and the third is a post-instructional phase that encompasses both student and teacher evaluation.

Objectives for Experienced Teacher Participants

The various professional levels that received training within the TTT Project at the University of Washington are illustrated in the accompanying

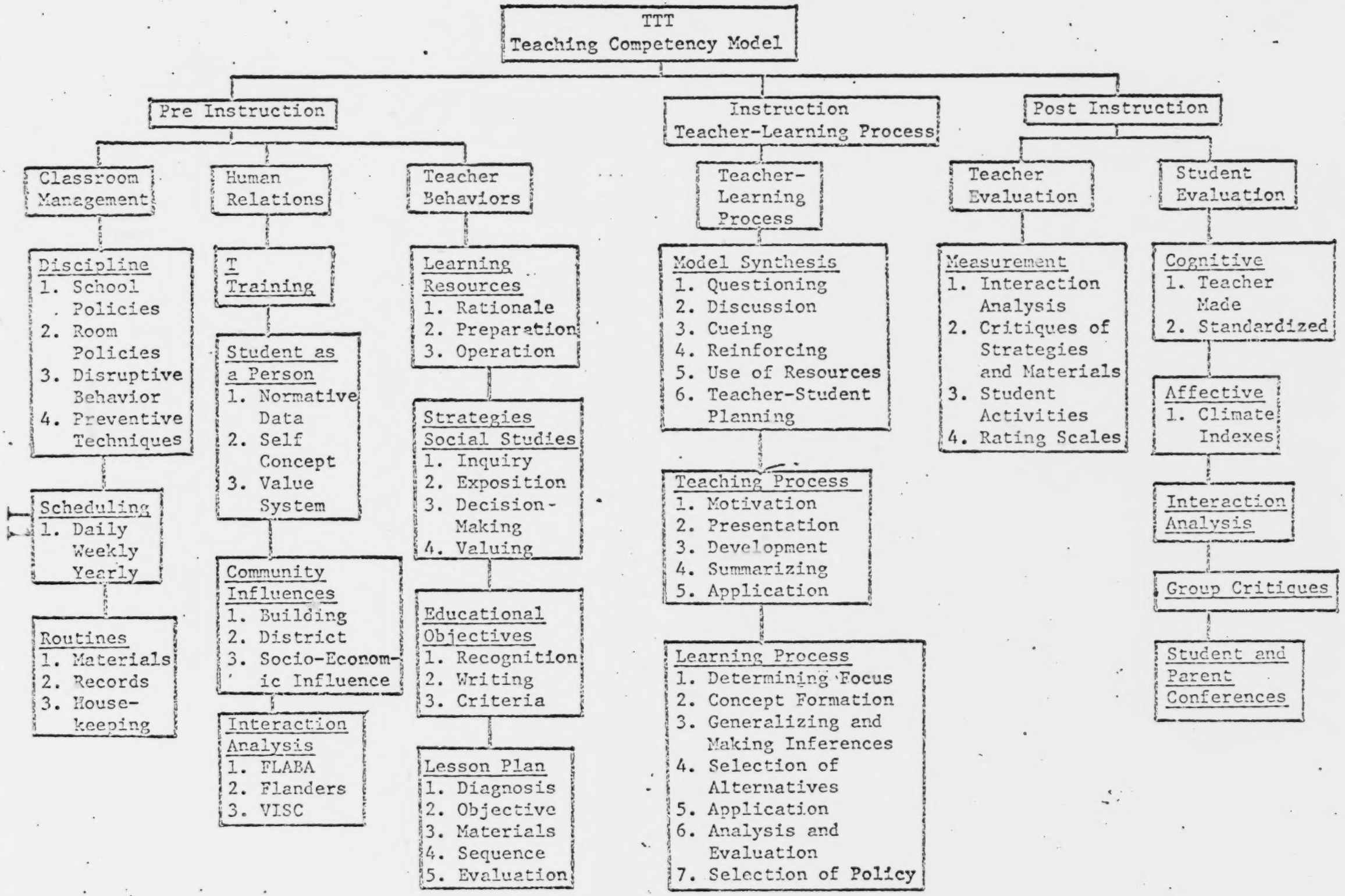
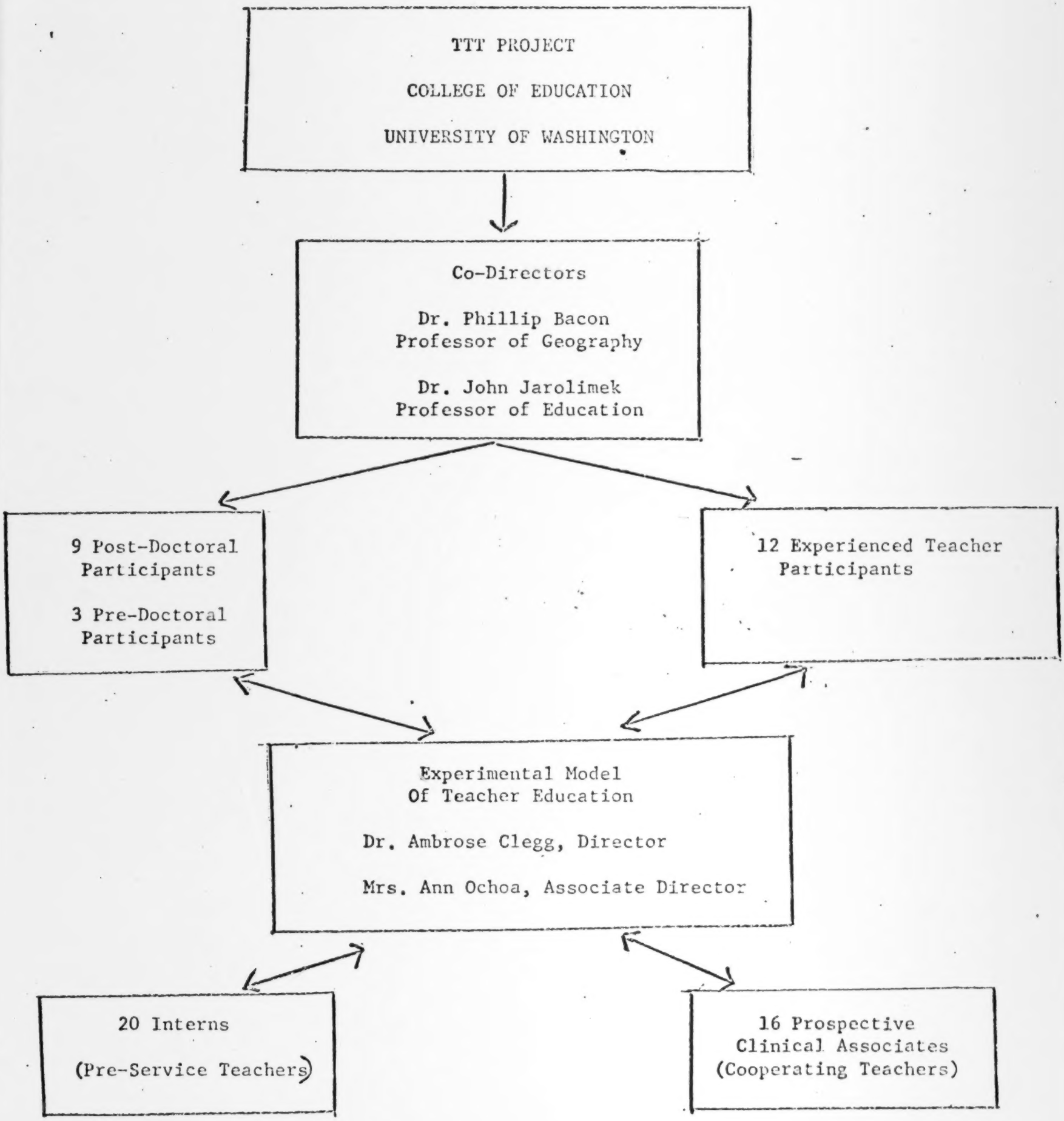


Figure One - TTT Teaching Competency Model

This model was developed by three graduate students who were assisting the Project. They are Joe Decaroli, Sister Judith Shanahan and Jack Simpson.


TTT PROJECT
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Professor of Geography
Dr. John Jarolimek
Professor of Education
9 Post-Doctoral Participants
3 Pre-Doctoral Participants
12 Experienced Teacher Participants
Experimental Model
Of Teacher Education
Dr. Ambrose Clegg, Director
Mrs. Ann Ochoa, Associate Director
20 Interns
(Pre-Service Teachers)
16 Prospective Clinical Associates
(Cooperating Teachers)

Figure Two

diagram (Figure Two). Some of these participants designed objectives and criteria and implemented the instruction that they defined as basic to the attainment of these objectives. There were nine postdoctoral participants who came from nine different teacher training institutions. Additionally, there were twelve experienced teacher participants representing twelve different school districts across the United States.

The following objectives were developed for these experienced teacher participants. First, the Experimental Model for Teacher Education sought to provide experienced teacher participants with a laboratory for preservice and inservice training. Additionally, they had opportunities to develop and sequence performance objectives for teacher training, as well as the accompanying performance criteria for evaluation. They were directly and actively involved in the preparation of prospective teachers in the Experimental Model for Teacher Education. In a one year sequence, they were engaged in experiences designed to develop their leadership potential as trainers of teachers. These experiences included the supervision of interns on a one-to-one basis. Supervision, in this case, included support, guidance, and evaluation of interns with respect to performance criteria. These supervisory activities permitted the experienced teacher to serve as demonstration teachers in classrooms. Additionally, some of the experienced teacher participants were involved in the development of behavioral objectives and performance criteria for interns in social studies and science education. The same individuals also implemented the instruction and evaluated the interns with respect to the predefined performance criteria. These activities served to implement the two major objectives that were defined for experienced teacher participants.

Objectives for Cooperating Teachers

In order to permit the school to play a more powerful role in the preparation of prospective teachers, training for inservice classroom teachers was necessary. These cooperating teachers allowed prospective teachers to participate in their classrooms as teacher aides, teaching assistants, part-time teachers and full-time student teachers. The training that cooperating teachers received focused on the following objectives. First, the program trained cooperating teachers to demonstrate instructional competencies as trainers of teachers. Second, the training for cooperating teachers was designed to develop competencies in criteria evaluation with respect to the training of teachers. The training provided cooperating teachers will be described more fully in Chapter One - Relationships with Cooperating Schools.

Personnel Levels

To implement the objectives for the total program as well as for each of the targeted training groups (prospective teachers, experienced teacher participants and cooperating teachers), the leadership associated with the Experimental Model for Teacher Education had to workwith a wide range of professional persons representing the public schools, the university, and the State Department of Public Instruction.

Public School	University	State Dept. of Public Instruction
Superintendent of Schools	Dean - College of Education	Superintendent for Teacher Education and Certification
Principals of Cooperating Schools	Director of Student Teaching	
Cooperating Teachers	Director of Field Experience	
	Advisory Office	
	Teacher Education Committee	
	Instructional Staff	

Public School

The initial arrangement to gain the cooperation of school districts had to be made at the level of the office of the Superintendent. In the case of the Experimental Model for Teacher Education, these cooperative arrangements were made through the Office of the Superintendent of the Seattle Public Schools and of the Shoreline Community Schools (a school district in suburban Seattle). Throughout the academic year, it became necessary to secure similar agreements from three schools outside these districts. These subsequent contacts were made through building principals. Consistently it was found that more productive relationships existed with those schools that had involved the Office of the Superintendent in the original decision-making process.

Building principals were regularly involved in the selection of cooperating teachers. It was found that principals selected teachers in a variety of ways. Some teachers volunteered, others were chosen by the principal on the basis of competence or preference. Still others were restricted by school policies that limited the number of student teachers that could be assigned to a teacher in one academic year. In two cases, cooperating principals also provided physical space for the interns to plan, receive instruction and hold group meetings.

The cooperating teachers were asked to permit the intern to participate in his classroom as a teacher aide, teaching assistant, part-time teacher and full-time student teacher. The cooperating teacher was not involved in the evaluation of the intern but rather, could guide the intern with respect to planning and teaching on a day-to-day basis. Concurrent with the program for the prospective teacher, the cooperating teacher received instruction related to the training and supervision of teachers.

The University

In order to implement a performance-based teacher education program that would not follow the traditional course requirements for certification, approval had to be secured from both the Office of the Dean of the College of Education and the Director of Student Teaching. This was of special importance in a state that permits institutionally approved teacher certification. In spite of this initial approval, university-wide registration arrangements required that interns register for established courses. The

professors teaching these courses were asked to submit grading cards to the Director of the Experimental Model for Teacher Education. Generally, these professors readily agreed. These intricate intra-college and inter-university arrangements need to be worked out in considerable detail or many technical complications develop that can build a smokescreen that obscures the perceived strengths and weaknesses of the program.

Further, a performance-based program is evaluated on a pass-fail basis. Letter grades have little meaning when evaluation is focused on meeting performance criteria. In order to secure approval for pass-fail evaluation, both the Director of Student Teaching and the Teacher Education Committee of the College of Education had to be consulted and agreement had to be secured. Even though these conditions were met, other problems developed. For example, the number of courses a student can take on a pass-fail basis is limited by the university. The program for the university computer that records grades defines some courses as ones that shall necessarily receive grades, while others are defined as pass-fail courses. Special policies and practices have to be implemented to circumvent such obstacles. Storage of records and the advising of students require cooperative arrangements with the Advisory Office and the Director of Field Experiences. Clearly, a program such as the Experimental Model for Teacher Education requires many unique arrangements that deserve diligent attention prior to the onset of instruction and field experiences for prospective teachers.

While the Project staff, along with the experienced teacher participants, provided most of the instruction for interns, in certain cases regular university personnel was utilized. The use of regular university personnel required adjustments of faculty class loads and the trading of Project personnel to relieve faculty overloads. Though these arrangements were made, the administrative entanglements were many and optimally deserve considerable attention in the planning phase of the program.

The State Department of Public Instruction

The Superintendent for Teacher Education and Certification had to be informed of the program. In light of the Fourth Draft and its consistency with the Experimental Model for Teacher Education, support from this office was assured.

Dealing with these various levels of personnel in the school, the university and the State Department proved to be a massive task. Many of the recommendations that will be made in this manual will be targeted toward securing such arrangements in a manner that will maximally facilitate effective program management.

Chapter 1

RELATIONSHIPS WITH THE COOPERATING SCHOOLS

One purpose in selecting field centers or cooperating schools was to provide an opportunity for prospective teachers to have classroom experiences in three types of socio-economic school communities: an inner city school, an urban school, and a suburban school. The initial plan was to rotate the interns through each of the different school communities to provide a variety of experiences during the year of training in order to establish a more powerful decision-making base for the prospective teacher's career decision and to offset the criticism that most student teachers have only a limited acquaintance with the real world of schools, especially urban ones.

Three schools were initially selected to serve this function: the Wing Luke School in the southeast part of Seattle which had a high percentage of minority students (mostly Oriental); the Decatur School in the northern part of Seattle, which was a middle class, urban school with some students bussed in from the Central District; and the Cedar Brook School in the suburban Shoreline School District a few miles north of the city of Seattle. Additional arrangements were made early in the fall with the principal of the Stevens School (Central District) on Capitol Hill to set up a program for observations, teacher-aide experience, and some tutoring activities. The Decatur School was able to provide an empty classroom for the Project's full time use, and since it was only a few miles from the University, it became the headquarters unit where most of the seminars were conducted. The principal and faculty at Decatur proved to be most generous and gracious hosts, willingly sharing all of their facilities with twenty interns, and some eighteen or more Tri-University Project teacher par-

The Field Base:

As indicated in the Introduction, the program was designed to apply a number of assumptions about teacher education in a field setting, specifically in public school classrooms. It was anticipated that students would engage in a series of teaching activities of increasing duration and complexity over the year, concurrent with a program of instruction in educational methods, materials, and strategies of instruction. As shown schematically in Figure 1, prospective teachers would have a minimum amount of classroom participation early in the fall, serving as teacher aides, tutors, teaching assistants, and gradually increase their classroom involvement to assume responsibility for instruction in one or two subject areas by winter. By spring they would be ready for full time responsibility for the instruction and management of the entire classroom.

The design of a field centered program won strong favor with the prospective teachers who were most anxious to have early practical classroom experience and wanted to avoid the irrelevant and theory-oriented experiences that they had either experienced or heard about at the University. In reality, however, many factors made it very difficult to operate as planned. The chief reason probably was that role definitions for cooperating and prospective teachers had not been adequately worked out in advance of the program. The prospective teachers were viewed as student teachers and it was assumed that they were fully prepared and ready to begin teaching at once. In addition, rigid scheduling in many of the field schools made it

almost impossible to deviate from fixed arrangements. Almost uniformly the 3-R's were taught in the morning. It was virtually impossible for the interns to plan any other type of activity such as art, creative dramatics, or extended discussion on current issues during this time. Some interns felt they were restricted to low level chores such as collecting milk money and running off dittos and that they were almost prohibited from meaningful contact with children. On the other hand, when asked to assist with small group instruction, particularly in reading or language arts, they suddenly realized their own inadequacies and asked for a "crash course" on methods and materials in the teaching of reading.

A further complication was found in the day-to-day adjustments that were necessary as the field-center school learned to live with a program which was largely external to the school's own program. It is fair to say that misunderstandings prevailed. The principals had been only hurriedly briefed by the project directors and while they were largely sympathetic with the program and its general goals, they had not participated extensively in the development of its philosophy of the design of its operation. Many of the cooperating teachers were chosen by the principal with little real knowledge of the program; some were not informed until almost the day school opened. Probably the greatest concern was the presence of six or eight interns in a building that was already crowded and had little or no elbow room. It must be said, however, that the principals were extremely generous and resourceful in supplying or making over some kind of working space for the program. Nevertheless, the presence of prospective teachers was not always viewed with the universal enthusiasm and the cordiallity of their

initial welcome rapidly diminished as some of the interns failed to observe the unwritten social amenities of the school. Principals began to receive complaints that the interns took up all the chairs in the faculty lounge; the coffee urn was emptied and fresh coffee was not remade in time for the teachers' coffee break. Grievances such as these had a habit of smoldering for several days and then blowing up out of proportion resulting in a crisis situation with many long phone conversations and hurried visits to the school to attempt to defuse the situation and restore harmony. The principals, sympathetic as they were, were often caught between an unhappy faculty and a desire to cooperate with the University's program. In two instances, situations such as these were the spark which touched off a much larger conflict between the building principal and the faculty over a series of long-standing and unresolved problems, entirely internal to the school and unrelated to this Project.

Many of these problems were gradually overcome by the winter of 1970 as a more effective liason was worked out between the project staff and the cooperating schools. By spring things were more harmonious and most of the interns were operating with a high degree of effectiveness. But by then we had all learned to live with the minor daily crises. Growing pains such as these undoubtedly cannot be avoided, but they certainly can be reduced by more careful advance planning with all who are to be involved and by having the courage and wisdom to delay the launching of any program that hasn't worked out such details at the outset.

Recommendation 1

The principals and cooperating faculty of associated public schools need to be thoroughly oriented to the goals and characteristics of the program.

Recommendation 2

The principals and cooperating faculty need to be involved in the development of performance objectives for prospective teachers.

Recommendation 3

Cooperating schools should be selected on the basis of demonstrated innovations as well as on the basis of representation of contrasting socio-economic school communities.

Recommendation 4

To avoid unnecessary discord with cooperating teachers, prospective teachers need to be alert to the concerns of the faculty regarding parking and lunch facilities, use of supplies, etc. These trivial matters must not be allowed to interfere with the development of a school climate that will provide the greatest potential for the growth of prospective professionals.

Recommendation 5

Selected cooperating schools and their faculties need to demonstrate a willingness to provide conditions that will permit the prospective teachers to function as a tutor, teacher aide, teaching assistant, and full-time teacher.

Recommendation 6

Sufficient lead time (3 academic quarters) needs to be provided to plan and implement this training of cooperating teachers in

such generic teaching competencies as inquiry, simulation, exposition, use of media, writing behavioral objectives, questioning, evaluation, recent developments in specific curricular areas, and interaction analysis.

Recommendation 7

Cooperating schools need to provide a setting that supports the systematic study of teaching and learning.

A Laboratory Setting:

In addition to utilizing cooperating public schools as field base centers, they were to serve as laboratory settings for learning about the teaching and learning process in much the same way that Dewey had envisioned such a laboratory environment as long ago as 1904.[1] In discussing the differences between what he called an "apprenticeship" program for training student teachers and a laboratory setting, Dewey emphasized the need for allowing student teachers to try out their ideas, to experiment with them, to carefully analyze the results, and to discuss and evaluate the entire process with their professors. Student teachers, Dewey hoped, would study the teaching and learning process in the same scientific way that they studied the natural environment around them in physics, chemistry, and biology laboratories. They would be free to modify the methods of teaching, the nature of the curriculum, and the conditions and materials of learning as the needs of the situation seemed to indicate. It was anticipated by the project staff that given

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[1]Dewey, John et all. The Relation of Theory to Practice in the Education of Teachers, 3rd Yearbook, Part I, the National Society for the Study of Education, (Chicago: University of Chicago Press, 1904).

a program of limited classroom involvement early in the fall the prospective teachers would be able to use these as laboratory activities for studying the teaching and learning process. It was hoped that a series of short, but carefully planned activities carried out in the classrooms would provide the necessary experiences for understanding the theoretical dimensions of teaching: the psychology of learning, the social dynamics within the classroom and school context, and the philosophical foundations that undergird curriculum development and strategies of instruction.

This goal proved to be rather naive and impossible to attain for several reasons. First, the Project staff had no influence over the objectives, teaching practices, or daily activities in the classrooms of the cooperating teachers. Even where good cooperative relationships prevailed, sufficiently strong differences of opinion that interfered with the establishment of experimental conditions. Many interns and staff members perceived the cooperating teachers as strongly oriented to maintaining an existing program with little variation permitted. Conversely, cooperating teachers viewed staff and interns as indifferent or even opposed to the need for order, discipline, continuity in the program, and as too ready to question or reject commonly used or accepted practices.

Second cooperating teachers were not released or relieved from any of their regular teaching responsibilities. Typically in most student teaching situations, the function of cooperating teachers was a voluntary addition to all of their regular work. Thus, these teachers felt a keen sense of responsibility for the planning and daily operation and management of the classroom. They were unwilling to permit wide fluctua-

tions in routine or deviations from the existing curriculum. Lastly, sufficient lead time was not built into the early planning stages of the program to permit a full partnership relationship to develop among all interested parties: the university staff, the school officials, cooperating teachers, prospective teachers, and members of the community.

Perhaps creating a laboratory setting was not an attainable goal given the circumstances. The history of teacher education is littered with remnants of laboratory schools, campus demonstration schools, and experimental centers that have either been so free and experimental that they lacked the reality of the actual public school setting, or they became rigid models of a particular form of teaching and lost their experimental character. What the project sought to achieve was a mix that would stand somewhere between these extremes. This mix would be marked by sufficient flexibility in its approach that it could dare to be innovative and experimental. At the same time, it was the intent of the program to bear sufficient resemblence to typical school settings that it would have credibility with college students and practicing teachers and would not suffer the label of being an "ivory tower."

Recommendation 8

That in-service training for clinical associates precede the start of the intern training program.

Selection of the Clinical Associates (Cooperating Teachers):

Late in spring, 1969, conferences were held with the principals of the schools selected to participate in the program. On the basis of the general outline of the program, the principals were invited to nominate ten cooperating teachers to participate.

To emphasize the involvement at field level, and to indicate the enlarged scope of responsibility with the University faculty, the term "clinical associate" was coined to describe the function for which the cooperating teacher was being trained. It was borrowed from Medical Schools, where the position of "clinical associate" has been common for many years. It was envisioned that the clinical associate would perhaps be employed jointly by the public school district and the college or university. His position would be not unlike that of the supervising laboratory school teacher in the old normal school or teachers' college except that his home base would be in the public school rather than on the college campus. He would be in a favorable location to help interns translate learning theory into teaching practice.

This position was also consistent with trends emerging in the State of Washington related to the training of teachers. A set of proposals, commonly known as the Fourth Draft[2] envisioned that school systems and professional associations, as well as colleges and universities, might engage cooperatively in teacher education programs. In addition, there would be an educational staff associate certification for persons

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[2]Allen, Wendell C. and Drummond, William H., Statement of Standards for Preparation of School Professional Personnel Leading to Certification: Fourth Draft. Olypmia, Washington: Superintendent of Public Instruction, State of Washington, April, 1968.

whose primary function would be in the training and supervision of new and inexperienced teachers. Thus, the directors of this Project took the position that if the traditional role of the cooperating teacher was to change from one of limited involvement to a fully cooperative venture with the University in the education of new teachers, then a new role definition and specialized training would have to be provided.

Recognizing that the Clinical Associates were to be a vital link in this program, criteria had to be developed for their selection. Unvortunately, a review of the pertinent literature and educational research provide little information. General characteristics such as warmth, non-directiveness, competency in subject matter, and recognition as a master teacher in the classroom were generally cited as being critical. But what measures could be considered adequate predictors of such behaviors? Some consideration was given to the possibility of administering a battery of objective test instruments such as the Graduate Record Examination, the Minnesota Teacher Attitude Test, the Minnesota Multi-Phasic Inventory, and the like, but this approach was quickly discarded because it would be too difficult to administer the tests to a large enough population from which to select potential teachers in the limited time available. It was also obvious that such a screening measure would have been too easily misunderstood and establish unnecessary barriers to the recruitment of cooperating teachers. Some more general criteria were discussed and mutually agreed upon by the staff and the principals to serve as guidelines for selection:

a. Some previous experience in supervising a student teacher.

b. Recent graduate work in teacher education, preferably the completion of a Master's degree.

c. Willingness to participate in the program. Participation would include the supervision of prospective teachers each quarter and participation in a program of in-service education throughout the year.

d. Recommendation by the school principal.

In the final analysis the recommendation by the school principal became the determining factor. From an inspection of biographical data on application forms, it was evident that there was as much variation on the aforementioned criteria within a single school as between schools. On a subjective basis, it appeared that personal rapport with the principal was a key factor in selection.

Recommendation 9

Primarily, cooperating teachers should be selected on the basis of demonstrated innovative practices. Optimally, observations of these classrooms needs to be made. Additionally, an interview may be held with the cooperating teacher to determine if he or she is willing to participate in a range of in-service activities. Recommendations from principals and grade point averages should also be reviewed.

Training of Cooperating Teachers:

It has long been recognized that the cooperating teacher is the single most important factor in shaping the prospective teacher's performance. In most cases this has meant that the student teacher has had only one model for teaching and because of the pressures of the situation, he has often had to conform to that model. In setting up this program, it was planned that there would be a variety of models for the intern to observe, analyze, and possibly emulate since they would have experiences in three different schools. In addition the clinical associates would be thoroughly familiar with recent developments in teaching and would be outstanding exemplars of the instructional methods that the interns would be learning during the year.

It was also recognized, however, that many of the prospective clinical associates had had no formal study in training and working with a student teacher, and that many were unfamiliar with some of the newer developments in teacher education which would be a part of the intern's training . For these reasons plans were made to offer an in-service training program during the school year and to provide University credit for it.

Some rather broad objectives were spelled out at an early planning conference:

The Clinical Associate will be able to:

1. Distinguish between personal style and those behaviors based on research principles of learning.
2. Demonstrate a commitment to theories of teaching and learning.
3. Translate theoretical knowledge into practice.

4. Demonstrate use of analytic instruments for the analysis of an intern's teaching.

5. Interpret, diagnose and develop remedial prescriptions from available alternatives.

6. Provide supportive help in a counseling-type interview to help interns assess strengths and weaknesses.

An analysis of the role of the clinical associate indicated that clinical associates should have subject matter, research, technical, administrative, pedagogical, counseling, supervisory, and evaluative competencies.

A series of training sessions during the fall and winter quarters dealt with a variety of systems for observing and analyzing teacher behavior. These included the cognitive levels of questioning based on the Bloom taxonomy,[3] Flanders' verbal interaction analysis,[4] and Hanson's system for content analysis,[5] nicknamed "FLABA" because of its combination of elements from Flander's interaction analysis and Taba's strategies of teaching. The spring quarter included training in shifting one's style of teaching and in the use of the Sony video tape recorders.

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[3] Benjamin S. Bloom, editor. Taxonomy of Educational Objectives: Handbook I--Cognitive Domain. New York: David McKay, 1956.

[4] Ned A. Flanders. Analyzing Teacher Behavior Reading. Massachusetts: Addison-Wesley, 1970.

[5] John Hanson, "Content Analysis," Unpublished paper, School of Education, University of Oregon, 1968.

Assessment of Strengths and Limitations:

The clinical associates were nearly unanimous in their reactions that the materials in the training program described above gave them a new way of focusing upon the teaching act without engaging in personal likes and dislikes, whims, or caprices. It allowed them to take a more objective approach to specific teaching behaviors, such as levels of questioning, pupil-teacher interaction and reinforcement strategies. Most felt that they gained personally and professionally from their participation in the program and can approach with much greater confidence the task of evaluating prospective teacher's performance. They were also willing to work with one another using the observational instruments described to provide feedback about one another's teaching at the peer level.

There are, on the other hand, some serious limitations that must be mentioned in assessing such a program. The first of these is the need to free the Clinical Associates from all or a large portion of their current teaching responsibilities. Even under the favorable conditions of the Project, it was very difficult for the Clinical Associates to "steal" the necessary time for planning, making and evaluating video or audio tapes with an intern-teacher, and at the same time meet existing commitments for faculty meetings, professional associateions, and parent conferences. Training sessions that were originally held during school hours had to be switched to the late afternoons.

The notion of concurrent training for the clinical associates was an expedient one, and hindsight suggests now that it was a poor one. Had the clinical associates been selected and trained during the preceding spring or summer, it would have been possible to provide much

more systematic feedback for prospective teachers during the fall quarter when they were engaged in limited tutoring and small group instruction.

Role Conflict:

Lastly, there is the consideration of the dual role expectancy of a clinical associate. Unless he is relieved of all or most of his teaching responsibilities and is clearly assigned a new role, he is still regarded as a teacher by his colleagues and by the administration. As such, there is strong peer pressure to conform to the "Establishment set" or the traditional mores that prescribe the roles and norms of the school culture:

> The good classroom is a quiet classroom;
>
> Reading must always be taught from 9:00 to 9:45,using only a basal text;
>
> It's a sign of weakness to send a child to the principal's office;
>
> But most important, don't make waves or rock the boat by being very different from the rest of us.

Our point is that the Clinical Associate must be sufficiently free of full time responsibilities to help interns bry out new ideas, particularly those that may depart from conventional wisdom or established orthodoxy. As Dewey has implied, the training of teachers in the laboratory setting must be recognized as the cutting edge between the theory and research developed at the University and the day-to-day professional practice in the classroom, otherwise we merely reinforce the status-quo. With the increased use of team teaching, felxible scheduling, or differentiated staffing concepts, the clinical associate

can be assigned a half or three-quarter time responsibility to work with interns, with the remaining time used to demonstrate or model various teaching methods. In this way he would be freer to suggest and support a far greater range of non-traditional practices and also see that the intern is accountable for following through on the consequences of his actions. It is not difficult to envision the situation in which a clinical associate would be largely responsible for the supervision and training of some 6-10 intern teachers on a full-time basis. Such plans are already in operation at Michigan State University and elsewhere and appear to be quite successful.

Recommendation 10

Teachers who are to serve as clinical associates should be chosen from among those who have completed the in-service training course.

Recommendation 11

The in-service training course should concentrate upon some generic aspects of teaching such as teaching strategies, behavioral objectives and methods of evaluation, systematic measures for the analysis of teaching, and counseling and supervisory techniques for working with interns.

Recommendation 12

That the clinical associate be freed from all or a large part of his classroom teaching responsibilities if he is to supervise as many as 6-10 interns.

CHAPTER 2

Selection and Training of Interns

A. Selection of Interns

The selection of prospective teachers (interns) for participation in a field-oriented, performance-based program was a complex task. Traditional requirements in the College of Education demanded a grade point average of 2.50, proof of physical and mental health, and satisfactory completion of a course entitled Introduction to Teaching. However, these minimal requirements did not appear to be sufficient for an experimental professional preparation program that was more intensive in its demands for demonstrable professional competence. Further, random acceptance of students as participants in the initial trial of a performance-based program would subject the experiment to unnecessary duress. It seemed reasonable to assume that in its first year an experimental program should not be deliberately confronted with the many problems that accompany the involvement of students who are marginal academically or those students whose personal qualities do not provide a positive index of their predicted teaching success. The fact that this program was an initial trial, coupled with the increased demands of a performance-based program, contributed to the complexity of the selection process.

In order to obtain a more accurate profile of the prospective teacher, interviews were scheduled with each applicant. During a half-hour interview,

a deliberate attempt was made to establish three points of information about the applicant. First, was he committed to teaching on a career basis? Second, did he demonstrate leadership qualities? Third, had he completed previous experiences with children successfully? The interview ended only after conclusions were reached with respect to each of the three points.

In summary, the selection process required a 2.50 g.p.a., completion of an academic major, and successful ratings as the result of a personal interview. On the basis of this information, twenty prospective teachers (interns) were selected from a total of approximately forty applicants. A self-selection factor is also involved whenever applicants are screened for a new or special program such as the Experimental Model for Teacher Education. Only those students who are seeking a departure from traditional teacher education programs apply. Although their individual reasons are varied, it seems plausible to assume that such students demonstrate more initiative and independence than a random sample of students in the regular program would demonstrate.

With respect to seventy-five percent of the applicants selected, the process described above resulted in participants who had little difficulty meeting the performance standards. In four or five cases, however, interns experienced substantial problems in demonstrating minimal competency standards.

Recommendations

1. Since a performance-based program probably requires more rigorous standards of professional performance than regular programs in teacher

education, each applicant should meet more than the minimal admission requirements designed for the regular program.

2. Interviews should be conducted in order to provide information that will serve as predicators of teaching success.

3. In addition to interviews, letters of recommendation should be solicited from previous employers as well as from those individuals who supervised the applicant's previous experiences with children. This practice was not implemented by the Experimental Model for Teacher Education. If such recommendations had been obtained, these statements probably would have eliminated those four or five individuals who experienced an inordinate amount of difficulty meeting the requirements of the program.

B. Development of Objectives and Training of Interns

Programs in teacher education often address the development of objectives and the determination of evaluation criteria as two distinct and separate processes. Such a dichotomous approach may result in programs that have expectancies that are neither evaluated nor attained. The fact that a performance-based program integrates objectives and evaluation (performance) criteria forces a merger of these processes. Two major questions that need to be answered in order to develop performance objectives are: (1) What does a beginning teacher need to be able to do? (2) What behavior will demonstrate that he can perform these minimal teaching tasks?

The response to the first question forms the objective, while the response to the second defines the performance criterion. These responses integrate the definition of objectives with evaluation criteria.

Example of Performance Objective and Evaluation Criteria

Performance Objective[1]

The intern will be able to prepare his own materials that will be used as learning resources for a social studies unit.

Criteria

1. The intern has produced one sample of each of the following:
   a. chart or graph
   b. map
   c. ditto sheet
   d. overhead transparency
   e. audio tape
   f. model
   g. bulletin board
2. The intern has prepared a statement of criteria to be used in the selection and collection of such materials.
3. Given a particular set of learning objectives, the intern has prepared at least two different kinds of materials that he used in a lesson. He was able to explain how these materials would assist in meeting his instructional objectives.

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[1]Adapted from: Joe Decaroli, Sister Judith Shanahan and Jack Simpson, Preliminary Statement: Behavioral Objectives - Teacher Competence, Tri-University Project, Experimental Model for Teacher Education, August, 1969.

Individuals who have a command of the theoretical and research knowledge in a particular field, as well as classroom teachers, need to be involved in the development of objectives and in an analysis of the various program components. The staff of the Experimental Model for Teacher Education was representative of these groups. The staff defined the following components: classroom management, educational psychology, measurement and evaluation, sociology of education, social studies education. science education, language arts, reading, and mathematics education. In most cases performance objectives and evaluative criteria for the Experimental Model for Teacher Education were developed by individuals who had considerable experience as classroom teachers or by graduate students in education. Additionally, the writing of these objectives and criteria was supervised by individuals who had considerable expertise in science education, math education[2], educational psychology and social studies education. The professional involvement of all of these individuals proved to be indispensable to the development of objectives and criteria that could be implemented in the operation of the program.

The implementation of performance objectives and performance criteria were followed by designing instructional sequences. In most cases, those individuals who were involved in the development of objectives and criteria were also responsible for planning the instructional sequence. Instruction for interns was provided in applied seminars. This term was developed to

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[2]The objectives and criteria used for the math education component were developed for another performance-based program operating in the College of Education at the University of Washington. These objectives were consistent with the overall objectives of the Experimental Model for Teacher Education. Author: Aaron Buchanan, doctoral student in math education, College of Education, University of Washington.

emphasize the relationship between the related research and theoretical knowledge in a given field to classroom situations. Although this goal was not fully realized, those courses that were most positively perceived by interns were the ones that developed this notion most powerfully.

Performance objectives and criteria are, in effect, prescriptions that the intern must follow. As such, the individual intern may view these prescriptions as a vehicle by which he is manipulated to perform as others see fit. Some interns demonstrated considerable frustration in this regard. This condition is intensified if the individual intern has not played a part in the development of these objectives and criteria. The implications of this observation are two-fold. First, involvement of interns might be viewed as an essential part of the program development. Second, interns might be encouraged to develop alternate performance objectives to replace those objectives that he can argue are not valuable for his professional purposes. The development of such objectives might be supervised by classroom teachers and other professional personnel. Both of these implications could serve to reduce the regimented or prescriptive perceptions of performance-based programs.

Optimally, cooperating classroom teachers should be able to demonstrate the objectives and criteria that are the focus of the intern's program. However, since such objectives were developed by individuals who had knolwedge as well as competence with respect to recent trends in their particular field, classroom teachers, who had completed their professional training three to ten years ago, could seldom meet this

condition totally. Since the classroom teacher is a powerful model in shaping the teaching behavior of the prospective teacher, provisions to update the skills of the classroom teacher are essential. Without such inservice training, the effectiveness of the program provided for interns will be substantially limited.

Recommendations

1. Objectives and/criteria in performance-based programs in evaluation teacher education should be developed simultaneously.

2. These objectives and criteria should be developed by professional persons who have expertise with respect to a given component of the program in cooperation with classroom teachers.

3. Concern with respect to the prescriptive nature of performance objectives can be met in either or both of the following ways:

    a. prospective teachers may be involved in the development of objectives and criteria.

    b. prospective teachers may be encouraged to design alternate objectives and criteria under the supervision of professional personnel.

4. Cooperating classroom teachers should receive appropriate inservice training in advance, so that they are able to model the same behavior that is expected of interns.

5. Criteria in performance-based programs should be evaluated on a pass/fail basis. Either the intern has met the conditions specified in the criteria or he has not. It would be presumptuous to argue that the field of education has gained sufficient precision to facilitate refined grading practices. Although previous practice in teacher education demonstrates considerable use of five-point grading scales, little specificity can usually be given to each grading differentiation. At best, a pass/fail grading system still demands a degree of professional subjectivity in the evaluative judgment. However, a grading scale that is more complex can seldom be substantiated.

6. Provisions should exist for the intern to meet performance criteria at any time during the program. Optimally, if the intern is successful in completing all the criteria at an advanced date, his certification should be granted at that time.

7. Optimally, evaluation of performance criteria should be conducted by classroom teachers who have been trained to demonstrate the performance objectives and criteria. However, in the Experimental Model for Teacher Education the evaluation of interns was implemented by the experienced teacher participants in cooperation with those individuals who had designed the objectives and criteria. Cooperating classroom teachers were not involved in this process. Time was not available to train classroom teachers to demonstrate the objectives and criteria that the intern had to meet. Further, this experience represented part of the training for prospective trainers of teachers.

C. Nature of Instruction for Interns

Instruction for interns was provided during each of three academic quarters. In each quarter, interns met daily for varying blocks of time to fulfill instructional requirements. The program made an attempt to align the content focus of these applied seminars with the classroom experiences to which interns were assigned concurrently.

During the fall quarter interns received instruction targeted on classroom management, educational psychology and reading. At the same time interns were spending four hours per week in classrooms. This arrangement allowed application of some of their learnings directly into the

classroom. In order to maximize the potential of this arrangement, instruction needs to be designed in a manner that facilitates immediate application in classrooms. Generally speaking, the instructors in these applied seminars did not plan this instruction in this way and interns did not feel prepared to assume a concurrent teaching role in the classroom. Attaining this kind of applied instruction was difficult for several reasons. The instructors had not been sufficiently involved in the planning phase of the program. Additionally, such instruction necessitates a substantial departure from the lecture discussion style used by the instructors of many methods courses. Cooperating classroom teachers were not engaged sufficiently in the planning and consequently it was difficult, if not impossible, to coordinate the applied seminars with the classroom plans of the teacher.

Description

For five weeks of the second quarter interns were assigned to classrooms for two hours each morning. At this time, they were responsible for the teaching of reading. Generally, the interns perceived this arrangement that allowed them to apply the knowledge they had acquired fall quarter in their classrooms to which they were assigned the following quarter as a more constructive arrangement than that which permitted an immediate application of these learnings. The interns argued that at the completion of the applied seminar, they were able to synthesize the chief components of a reading program and, therefore, they were not functioning

in a fragmented way. It is our observation, however, that if the instruction was coordinated with the planning of classroom teachers, concurrent application would have been perceived more constructively. In the afternoons, interns received instruction in language arts and mathematics education.

During the last five weeks of winter quarter, the interns continued their daily two hour block in classrooms. At this time they were responsible for instruction in language arts and/or mathematics. This sequence permitted them to apply the learnings that had been provided the first five weeks in applied seminars for language arts and mathematics. During the afternoons they received instruction in science and social studies education.

In each of these applied seminars, interns were given a list of behavioral objectives. The intern could demonstrate that he had fulfilled these objectives during his limited teaching experience in the winter quarter or during his full-time teaching experience in the spring quarter.

The spring quarter was divided into a two week and an eight week block. During the first two weeks interns received instruction in educational sociology, evaluation and measurement and in a variety of observational instruments. For the last eight weeks they were assigned to full-time teaching in classrooms. During this time, instructors of the applied seminars visited classrooms to establish whether interns were meeting specific performance criteria. This evaluation was supported by the experienced teacher participants who were assigned to interns on an individual basis.

The following diagram illustrates the instructional sequence and its relationship to the interns' classroom experience.

Fall Quarter	
4 weeks	6 weeks
Introduction to Teaching: A Simulation Exercise Development of games that illustrated power relationships in the classroom, the school, and the community	Class room experience: a. Teacher Aides b. Teaching Assistants c. Teaching 4 hrs./week Applied Seminars Educational Psychology Reading

Winter Quarter	
5 weeks	5 weeks
2 hours classroom teaching Reading Applied Seminars a. Language Arts b. Math Education	2 hours classroom teaching Language Arts Math Applied Seminars a. Science Education b. Social Studies Education

Spring Quarter	
2 weeks	8 weeks
Educational Sociology Evaluation Observational Instruments	Full-time teaching

Recommendations

1. The program for interns should be characterized by instruction that permits immediate translation in classroom practice.

2. Several weeks in the planning phase of the program should be provided to coordinate classroom activities with instruction in the applied seminars.

3. The program should permit the intern to demonstrate the behavioral objectives at any time.

4. Those persons who provide instruction in applied seminars should also be responsible for evaluating the performance criteria as demonstrated by the interns.

5. Optimally, classroom teachers should be trained in advance so that they are able to assist with the evaluation of performance criteria.

Chapter Two: Selection and Training of Interns.

1. Since a performance-based program probably requires more rigorous standards of professional performance than regular programs in teacher education, each applicant should meet more than the minimal admission requirements designed for the regular program.

2. Interviews should be conducted in order to provide information that will serve as a predictor of teaching success.

3. In addition to interviews, letters of recommendation should be solicited from previous employers as well as from those individuals who supervised the applicant's previous experiences with children. This practice was not implemented by the Experiences with childre . This practice was not implemented by the Experimental Model for Teacher Education. If such recommendations had been obtained, these statements probably would have eliminated those four or five individuals who experienced an inordinate amount of difficulty meeting the requirements of the program.

4. Objectives and criteria in performance-based programs in teacher education should be developed simultaneously.

5. These objectives and criteria should be developed by professional persons who have expertise with respect to a given component of the program in cooperation with classroom teachers.

6. Concern with respect to the prescriptive nature of performance objectives can be met in either or both of the following ways:
   a. prospective teachers may be involved in the development of objectives and criteria.
   b. prospective teachers my be encouraged to design alternate objectives and criteria under the supervision of professional personnel.
7. Cooperating classroom teachers should receive appropriate inservice training in advance, so that they are able to model the same behavior that is expected of interns.
8. Criteria in performance-based programs should be evaluated on a psss/fail basis. Either the intern has met the conditions specified in the criteria or he has not. It would be presumptuous to argue that the field of education has gained sufficient precision to facilitate refined grading practices. Although previous practice in teacher education demonstrates considerable use of five-point grading scales, little specificity can usually be given to each grading differentiation. At best, a pass/fail grading system still demands a degree of professional subjectivity in the evaluative judgment. However, a grading scale that is more complex can seldom be substantiated.
9. Provisions should exist for the intern to meet performance criteria at any time during the program. Optimally, if the intern is successful in completing all the criteria at an advanced date, his certification should be granted at that time.
10. Optimally, evaluation of performance criteria should be conducted by classroom teachers who have been trained to demonstrate the performance objectives and criteria. However, in the Experimental Model for Teacher Education the evaluation of interns was implemented by the experienced

teacher participants in cooperation with those individuals who had designed the objectives and criteria. Cooperating classroom teachers were not involved in this process. Time was not available to train classroom teachers to demonstrate the objectives and criteria that the intern had to meet. Further, this experience represented part of the training for prospective trainers of teachers.

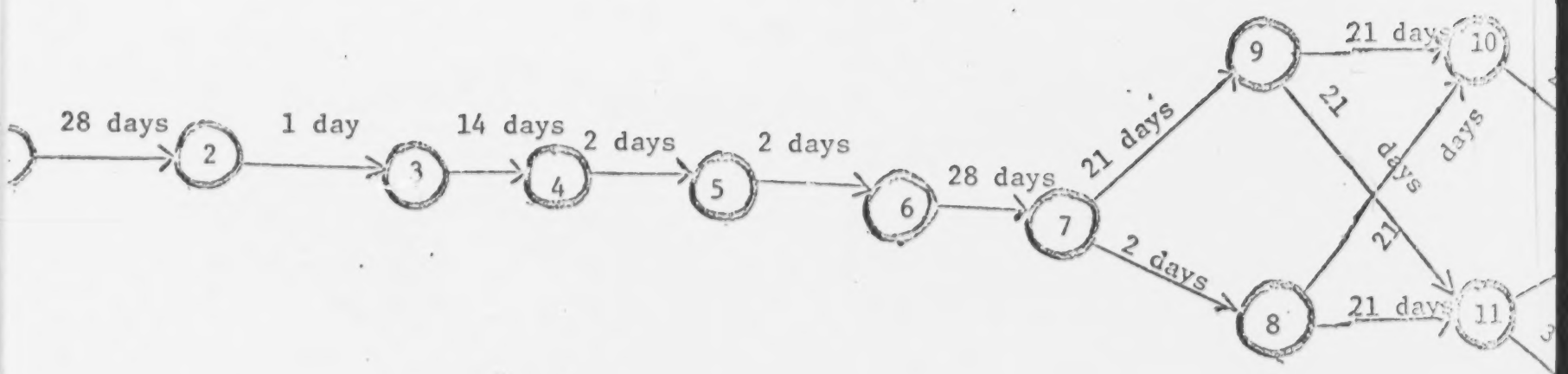
11. The program for interns should be characterized by instruction that permits immediate translation in classroom practice.

12. Several weeks in the planning phase of the program should be provided to coordinate classroom activities with instruction in the applied seminars.

13. The program should permit the intern to demonstrate the behavioral objectives at any time.

14. Those persons who provide instruction in applied seminars should also be responsible for evaluating the performance criteria as demonstrated by the interns.

15. Optimally, classroom teachers should be trained in advance so that they are able to assist with the evaluation of performance criteria.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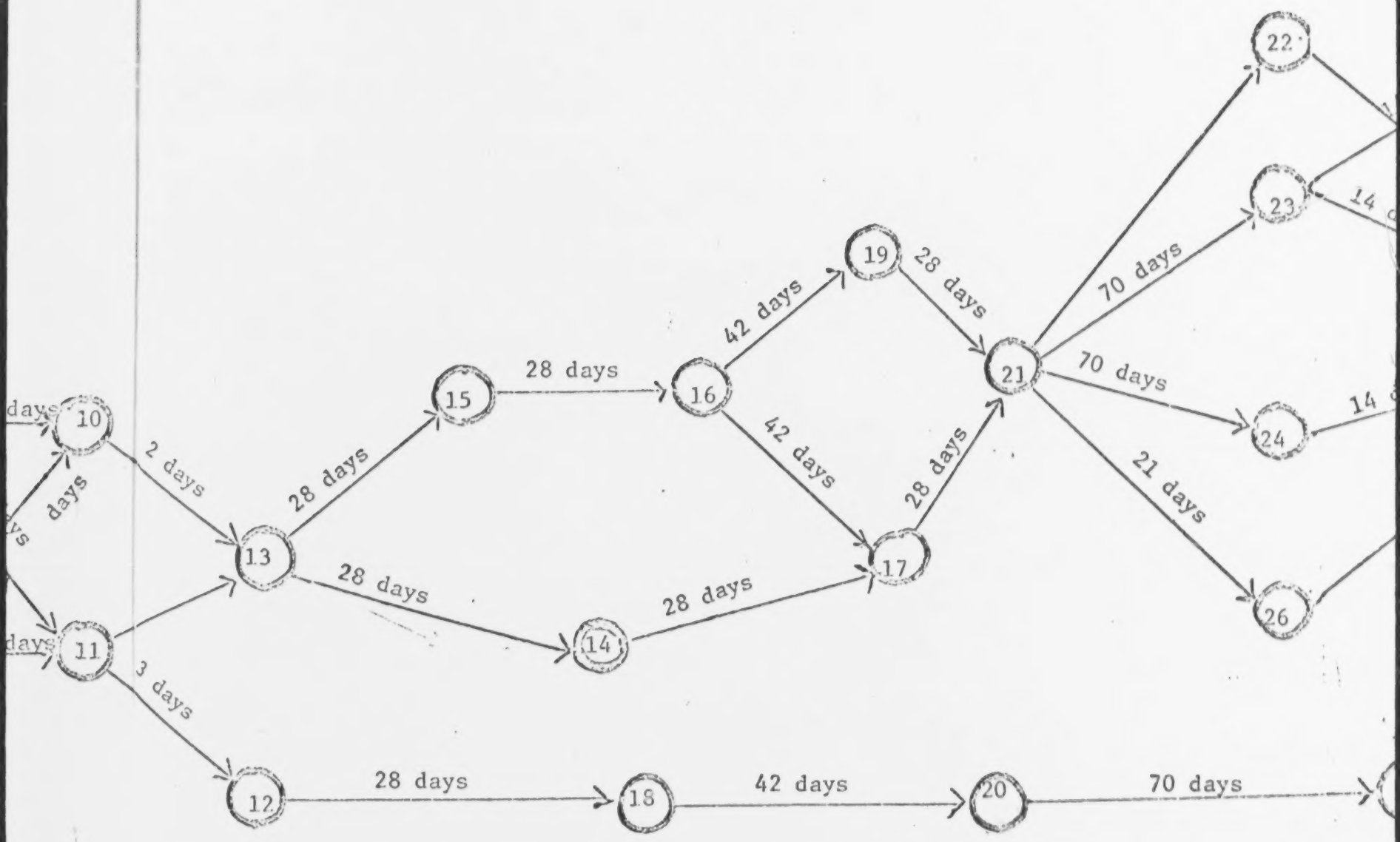
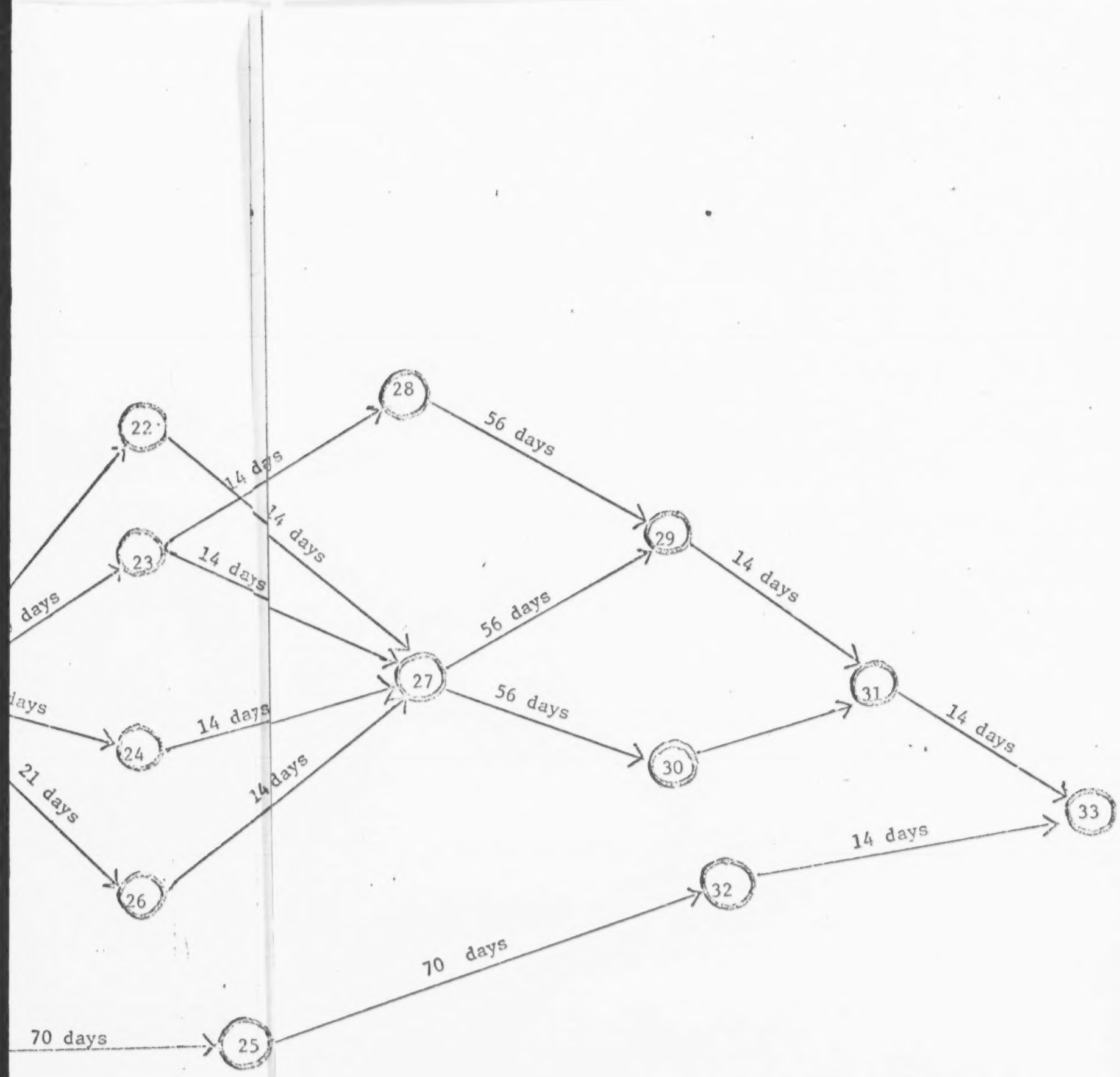
PERT DIAGRAM

EXPERIMENTAL MODEL FOR TEACHER EDUCATION

1969-1970 ACADEMIC YEAR



NOTE: This diagram is descriptive of the experimental program for Teacher Education as it was implemented in the 1969-1970 academic year. It is not to be confused with the predictive model that follows. The function of the above diagram is a contrastive one. Time indicated between events indicates the actual time spent on each successor event.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14 days
70 days

Experimental Model for Teacher Education

PERT Events

1969-70

1. Conceptualization of the model started.
2. Conceptualization of the model completed.
3. Approval obtained from the Dean of the School of Education to certify students who successfully completed the program.
4. Refinement of the program completed.
5. Selection of staff completed.
6. Orientation of staff completed.
7. Development of performance standards and criteria completed.
8. Cooperative arrangements with cooperating schools secured.
9. Equipment,supplies, office space secured.
10. Selection of twenty prospective teachers completed.
11. Cooperating faculty selected.
12. Orientation of cooperating faculty completed.
13. Orientation of prospective teachers completed.
14. Development of instructional packages in classroom management, educational psychology and the teaching of reading by staff and experienced teacher participants completed.
15. Analysis of decision-making in the classroom, school and community by prospective teachers completed (simulation games).
16. Classroom experiences as tutors,teacher aides and teaching assistants completed by prospective teacher.
17. Instruction in applied seminars in classroom management, educational psychology on the teaching of reading completed.
18. Instructional package for cooperating teachers completed.
19. Limited teaching experiences (four hours/week) for a six week period completed by prospective teachers.
20. Initial phase of instruction for cooperating teachers completed.
21. Instructional packages for prospective teachers in the teaching of language arts, math, science and social studies completed..

22. Applied seminars for prospective teachers in the teaching of language arts, math, science and social studies completed by staff and experienced teacher participants.

23. Half time teaching for a ten week period completed by prospective teachers.

24. Supervision of prospective teachers for a ten week period completed by experienced teacher participants.

25. Second phase of instruction for cooperating teachers completed.

26. Instructional packages in evaluation and measurement and observational teaching instruments completed by staff.

27. Instruction in evaluation and measurement and observational teaching instruments completed.

28. Instruction in educational sociology completed.

29. Full time teaching (eight weeks) by prospective teachers completed.

30. Evaluation of prospective teachers by experienced teacher participants completed.

31. Processing of grades completed.

32. Third phase of instruction for cooperating teachers completed.

33. Certification is granted for both cooperating teachers (Clinical Associates) and prospective teachers.

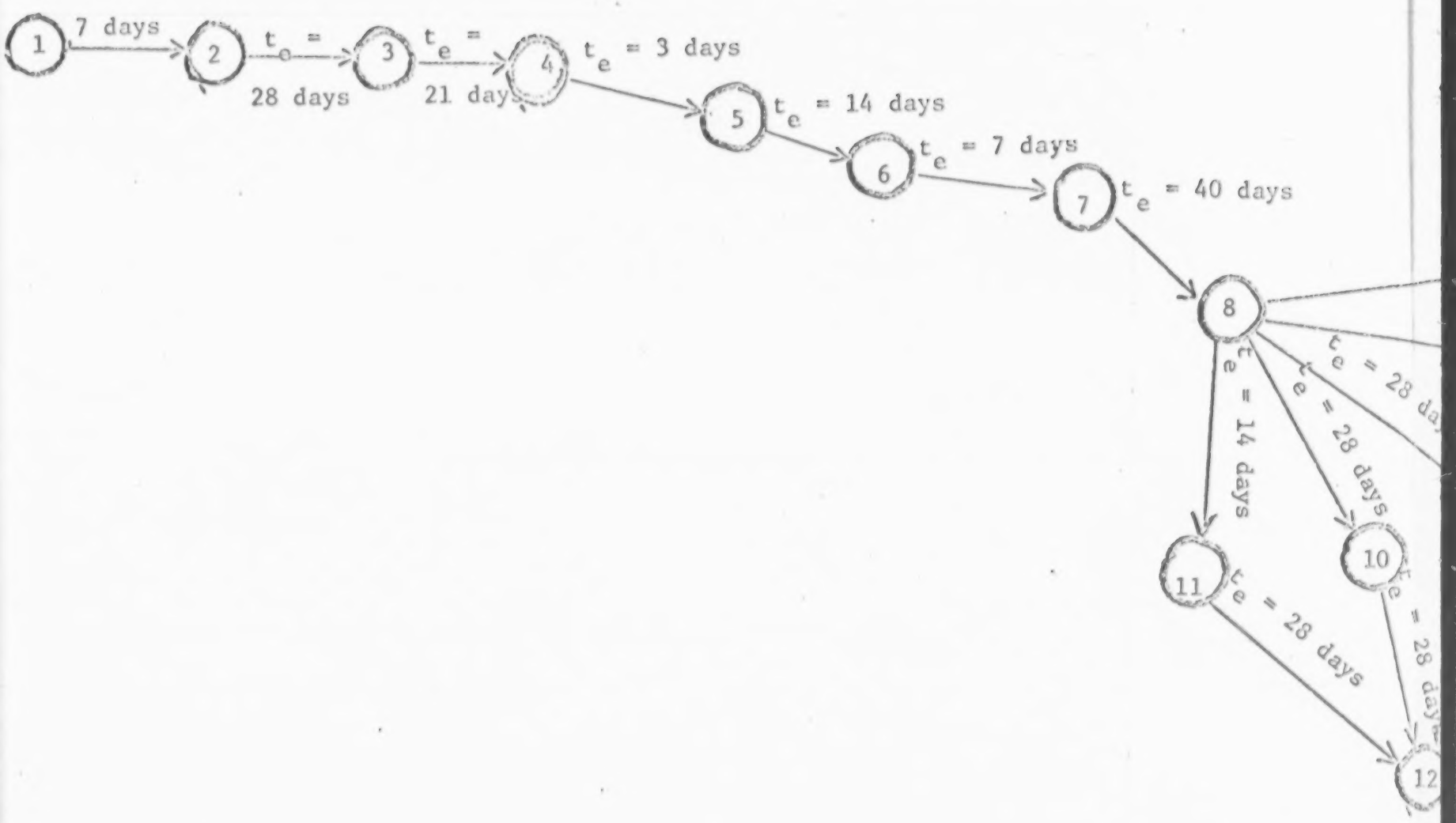
Chapter 3

The Experimental Model for Teacher Education: Sequence

In this chapter, two sequential (Pert-type) diagrams are presented. The first of these diagrams describes the program as it was developed and implemented in the academic year 1969-1970. Each circle represents a significant event in the program. The number indicated between events represents the amount of time that elapsed before a successor event was completed. The total time span involves cover dates from March 15, 1969 to June 15, 1970.

The second diagram presents a revised sequence of events predicated on the experiences of a single trial of the program. In this diagram the times designated for some successor events have been altered. However, the chief contrast with the first diagram is found in the total time span represented. This time span embraces two academic years. The major alteration is the provision for the training of cooperating teachers (clinical associates). In the proposed model training for cooperating teachers is provided in the academic year and summer session preceding the training of prospective teachers (interns). The reader should review the diagram carefully to assess both the significance and comprehensiveness of the events that are designated.

NOTE: Each diagram is keyed to the list of events that accompany it.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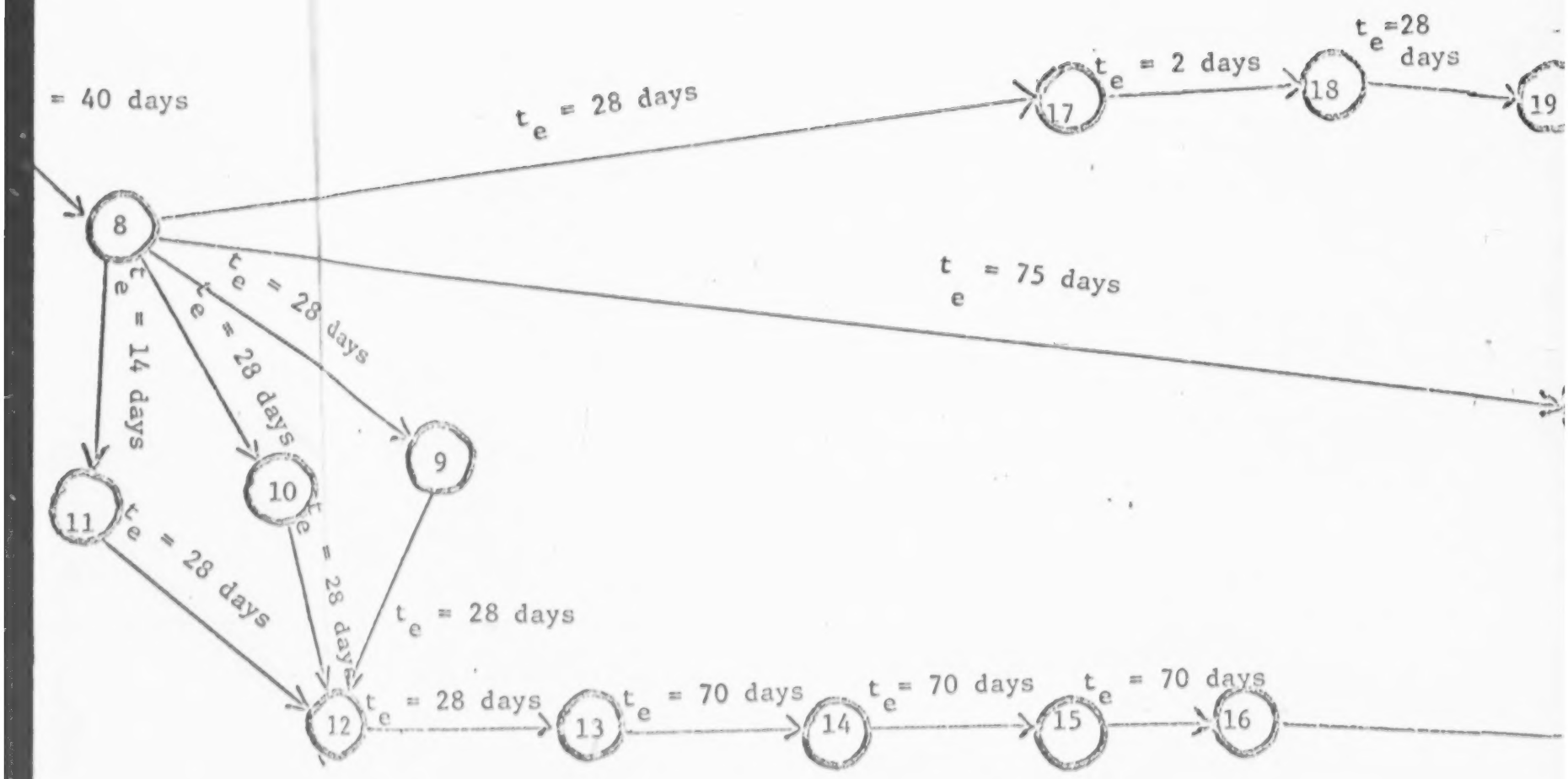
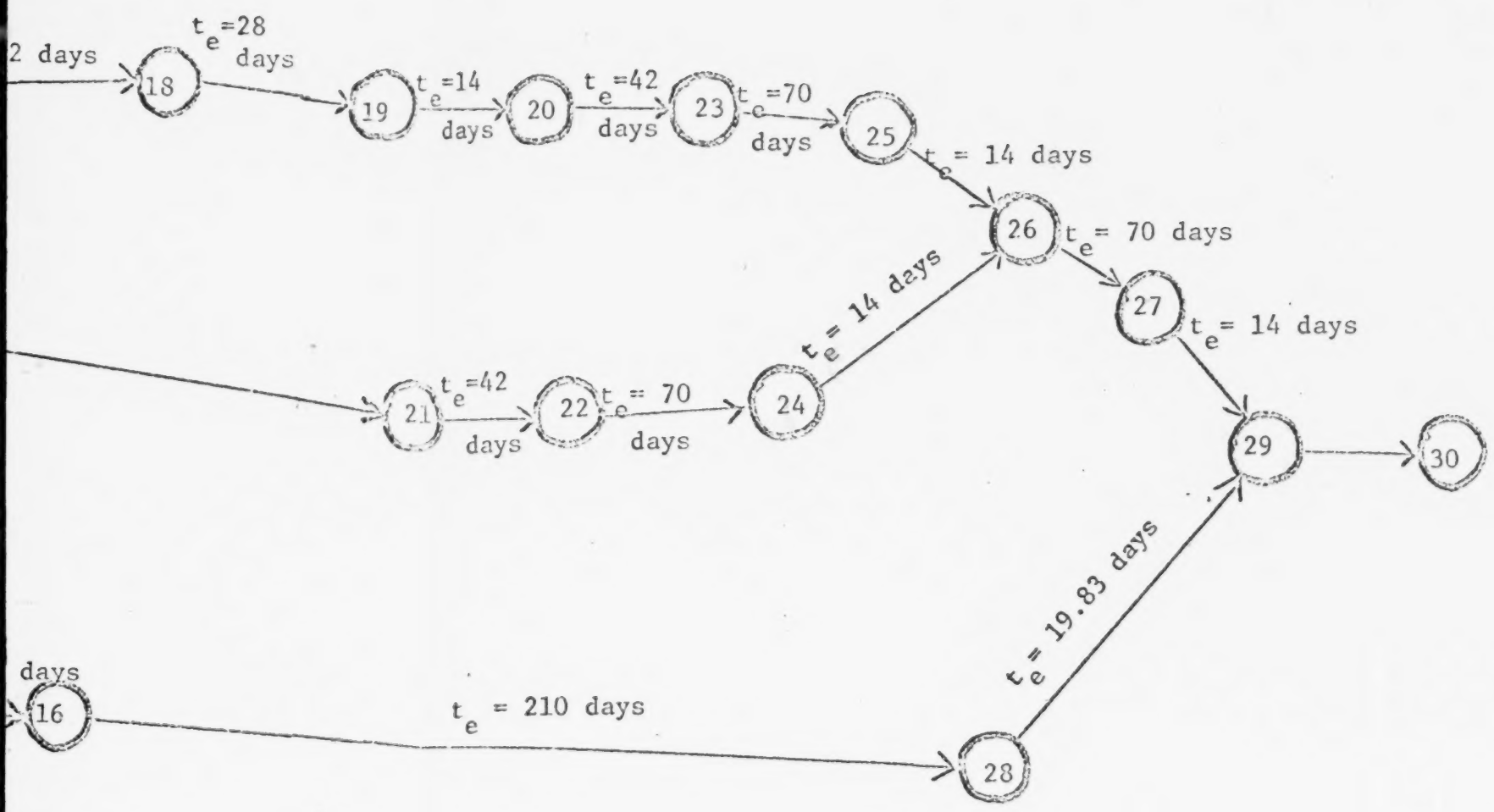
PERT-TYPE DIAGRAM

PROPOSED MODEL FOR TEACHER EDUCATION

(TWO ACADEMIC YEARS)

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t_e=42 days
22
t_e = 70 days
24
t_e = 14 days
days
16
t_e = 210 days
28
t_e = 19.83 days

Proposed Model for Teacher Education: PERT Events

1. Start of the program
2. Approval from the Office of the Dean of the College of Education secured (for certification of students who complete the program).
3. Selection of an advisory board completed.
4. Selection of staff completed.
5. Orientation of staff completed.
6. Approval and selection of cooperation schools secured and completed.
7. Orientation of faculties of cooperating schools completed.
8. Development of performance objectives and criteria completed.
9. Technical and bureaucratic arrangements within the University completed.
10. Acquisition of equipment, office space, and supplies completed.
11. Selection of cooperative teachers completed.
12. Analysis of decision-making in the classroom, school, and community by cooperative teachers completed.
13. Instructional packages for cooperating teachers completed.
14. Initial phase of instruction for cooperating teachers completed (behavioral objectives, questioning).
15. Second phase of instruction for cooperative teachers completed (observation measures).
16. Last phase of instruction for cooperative teachers completed (videotaping of prospective teachers, feedback conferences).
17. Selection of prospective teachers completed.
18. Orientation of prospective teachers completed.
19. Analysis of decision-making in the classroom,school, and community completed by prospective teachers.
20. Classroom experiences as tutors, teacher aides, and teaching assistants completed by prospective teachers.
21. Instructional packages for prospective teachers completed for the following areas:

    classroom management
    educational psychology

teaching of reading
teaching of language arts
teaching of social studies
teaching of science
teaching of art
teaching of music
teaching of physical education
evaluation and measurement
observational teaching systems
educational sociology

22. Instruction in applied seminars in classroom management, educational psychology, teaching of reading completed by prospective teachers.

23. Limited teaching (four hours per week) completed by prospective teachers.

24. Applied seminars in the teaching of language arts, social studies, science, math, art, music, and physical education completed by prospective teachers.

25. Half-time teaching completed by prospective teachers.

26. Instruction in educational sociology, evaluation and measurement, and observational teaching systems completed.

27. Full time teaching completed by prospective teachers.

28. Evaluation of prospective teachers completed by cooperating teachers.

29. Processing of grade cards, certification applications completed by prospective and cooperating teachers.

30. Certification is granted.

Proposed Model for Teacher Education

Average Time for each PERT Activity

Time Estimate Formula: $t_e = \frac{a + 4m + b}{6}$

	a^1	m^2	b^3	t_e^4	$\frac{2\left(\frac{b-a}{6}\right)^2}{5}$
1.	2 days	7 days	14 days	7.3 days	40
2.	2 days	7 days	14 days	7.3 days	4.0
3.	21 days	28 days	35 days	28.0 days	5.43
4.	14 days	21 days	28days	21.0 days	5.43
5..	2 days	3 days	5 days	3.3 days	.25
6.	7 days	14 days	21 days	14.0 days	5.43
7.	3 days	6 days	10days	6.16 days	1.35
8.	56 days	40 days	68 days	47.33 days	4.0
9.	21 days	28 days	35 days	28.0 days	5.43
10.	21 days	28 days	35 days	28.0 days	5.43
11.	7 days	14 days	21 days	14.0 days	5.43
12.	21 days	28 days	35 days	28.0 days	5.43
13.	21 days	28 days	35 days	28.0 days	5.43
14.	70 days	70 days	70 days	70.0 days	0.00
15.	a	a	a	a	a
16.	a	a	a	a	a
17.	21 days	28 days	35 days	28.0 days	5.43
18.	1 day	2 days	3 days	2.0 days	0.00
19.	21 days	28 days	35 days	28.0 days	0.00
20.	14 days	14 days	14 days	14.0 days	0.00
21.	60 days	75 days	90 days	75.0 days	25.0

	a^1	m^2	b^3	t_e^4	$\frac{2\left(\frac{b-a}{6}\right)^2}{5}$
22.	42 days	42 days	42 days	42.0 days	0.00
23.	42 days	42 days	42 days	42.0 days	0.00
24.	70 days	70 days	70 days	70.0 days	0.00
25.	70 days	70 days	70 days	70.0 days	0.00
26.	14 days	14 days	14 days	14.0 days	0.00
27.	70 days	70 days	70 days	70.0 days	0.00
28.	210 days	210 days	210 days	70.00 days	0.00
29.	14 days	14 days	21 days	19.83 days	1.16

30. Certification is granted

NOTES:

^1a - is the optimistic time estimate

^2m - is the most likely time estimate

^3b - is the pessimistic time estimate

^4t_e - is the average time that the activity would take if it were repeated many times

$^5 2$ - describes the uncertainty about the time for the completion of an activity.

6 - days are calendar days rather than school days.

Chapter 4

Evaluation

Assessment of the Program:

Of the twenty prospective teachers who entered the program, seventeen completed the program successfully and were certified. Of these, twelve (sixty per cent) individuals had obtained teaching positions as of June, 1970. The employability of this group was approximately equivalent to that of those individuals in the regular elementary teacher preparation program that placed sixty-two per cent of their students. Three persons failed to complete this program. Since these cases have implications for performance based programs, a brief profile of each follows:

1. Intern X began the program with a strong interest in schools as socializing institutions and with an intense desire to work intensively with children in the Central District. Early in October, 1969, he lead a "rebellion" among the interns against what he believed to be the overly structured design of the program. As a result, he and a group of five or six others were authorized to develop their own alternative objectives and an observation-participation program. This particular student worked independently in a second grade class in the Central District until Thanksgiving time. From then on he left the area without explanation and did not participate in the program. It was learned subsequently that he did volunteer work in a school in Harlem, New York, and lived during the spring near the Harvard Campus. In may of 1970 he returned to the University of Washington and sought to transfer from the College of Education to the School of General Studies.

2. Intern Y participated in the program for the full year. He was placed in schools in the three differing socio-economic areas. In each instance the school principal asked that he be removed from the school program after several weeks there. Intern Y's pattern of behavior was similar in each situation: he failed to plan adequately for his teaching assignments, failed to keep his cooperating teacher advised of his plans in a timely manner that would permit review of his plans prior to teaching, and developed a habit of being late or absent for his teaching responsibilities forcing the clinical associate to assume the teaching for him at the last minute without adequate plans or materials. Throughout the year, Intern Y was given an extensive amount of personal counseling by several experienced teacher participants and staff members affiliated with the Tri-University Project. These persons helped review his lesson plans, materials, observed his teaching regularly, and gave him many constructive suggestions for improvement. Since the last request for his withdrawal came within a week of the close of the public schools, there appeared no other option but to drop him from the program. By special permission, he was allowed to sit for examinations in regular methods courses at the University. He failed these examinations.
3. Intern Z remained with the program for the year. Despite repeated encouragement on the part of the staff whe was unwilling to submit herself for formal evaluation of her teaching. She would consistently insist that she was not ready or that the conditions in her classroom were not right. Even when she prepared alternative objectives and ways of meeting them of her own design and choosing, she still could not bring herself to say that she was ready to be evaluated on the criteria she herself

proposed. In the hope that some extended time and personal reassurances might be necessary, several less formal teaching situations were made available to Intern Z during the summer, 1970. She at first indicated to the staff that she would be willing to attempt to complete her requirements in this way, but later changed her mind and never took advantage of the opportunities available. Intern Z never completed the program.

It appears that performance-based programs may place additional demands on prospective teachers. Since some considerable effort was made to select candidates who appeared to have a higher probability of success in teaching, the fifteen per cent attrition rate may feflect that such programs are more rigorous and demanding than traditional teacher preparation. Additionally, for some individuals, the constraints of performance criteria pose an insurmountable barrier.

Experimental Design:

Experimental design does not lend itself in our judgment to the evaluation of developmental programs such as the Experimental Model for Teacher Education. Although it is possible to meet the criterion of random selection of a sufficiently large number of subjects, the problem of holding many variables constant in a teacher education problem are insurmountable. Individual conditions arise that necessitate adjustments that are most likely to minimize or eliminate the conditions of the experimental design. In this program many such events occurred. For example, it was the intent of the directors that the student spend each quarter in a contrasting socio-economic school community. In several instances, the necessity of providing prospective teachers with experiences that were consistent with their professional goals required changes in the placement of teachers that were not in accord with

the original design of the program. To do otherwise would ignore the individual goals of prospective teachers. Many other examples can be cited. However, this single example should illustrate the problem.

Although experimental design does not seem appropriate for evaluating the entire program, it does seem possible to apply this method to isolated components of the program. For example, one could contrast the language arts instructional package with a traditional methods course in teaching language arts by the performance of teachers and/or learners as dependent variables.

It should be kept in mind that experimental designs by their very nature can only supply evaluative information after the fact. The results can perform an information function in planning and revising the continuation of the program. However, this information is not available for adjustments that are necessary during the initial trial of the program.

Evaluation:

In spite of the difficulties encumbered by experimental designs as a vehicle for evaluation, the need for assessment is critical. One productive strategy for evaluation appears to be found in the CIPP Model which includes context evaluation, input evaluation, process evaluation, and product evaluation. This model was developed at the Evaluation Center, Ohio State University, and has been partially tested.

Context evaluation calls for the identification and definition of major subsystems of the domain to be served, the unmet needs in the domain, and the basic causal problems underlying each need. Input evaluation involves identifying and assessing system capabilities, available strategies, and available

procedural designs for the strategies. Process evaluation identifies and monitors the potential source of failure in a project without intervention. Product evaluation assesses the effectiveness of the project. A complete description of this model is to be found in Theory into Practice, 1967.[1] Most important, this model provides information that can be used as a basis for decision-making in the on-going program. Teacher educators embarking on new programs should find this tested source especially helpful in planning for evaluation of their programs.

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[1]David S. Stufflebaum. "The Use and Abuse of Evaluation in Title III," Theory into Practice, 1967, pp. 128-129.

APPENDIX

Recommendation 1

The principals and cooperating faculty of associated public schools need to be thoroughly oriented to the goals and characteristics of the program.

Recommendation 2

The principals and cooperating faculty need to be involved in the development of performance objectives for prospective teachers.

Recommendation 3

Cooperating schools should be selected on the basis of demonstrated innovations as well as on the basis of representation of contrasting socio-economic school communities.

Recommendation 4

To avoid unnecessary discord with cooperating teachers, prospective teachers need to be alert to the concerns of the faculty regarding parking and lunch facilities, use of supplies, etc. These trivial matters must not be allowed to interfere with the development of a school climate that will provide the greatest potential for the growth of prospective professionals.

Recommendation 5

Selected cooperating schools and their faculties need to demonstrate a willingness to provide conditions that will permit the prospective teachers to function as a tutor, teacher aide, teaching assistant, and full-time teacher.

Recommendation 6

Sufficient lead time (three academic quarters) needs to be provided to plan and implement this training of cooperating teachers in such generic teaching competencies as inquiry, simulation, exposition, use of media, writing behavioral objectives, questioning, evaluation, recent developments in specific curricular areas, and interaction analysis.

Recommendation 7

Cooperating schools need to provide a setting that supports the systematic study of teaching and learning.

Recommendation 8

In-service training for clinical associates precede the start of the intern training program.

Recommendation 9

Primarily, cooperating teachers should be selected on the basis of demonstrated innovative practices. Optimally, observations of these classrooms needs to be made. Additionally, an interview may be held with the cooperating teacher to determine if he or she is willing to participate in a range of in-service activities. Recommendations from principals and grade point averages should also be reviewed.

Recommendation 10

Teachers who are to serve as clinical associates should be chosen from among those who have completed the in-service training course.

Recommendation 11

The in-service training course should concentrate upon some generic aspects of teaching such as teaching strategies, behavioral objectives and methods of evaluation, systematic measures for the analysis of teaching, and counseling and supervisory techniques for working with interns.

Recommendation 12

The Clinical Associate should be freed from all or a large part of his classroom teaching responsibilities if he is to supervise as many as six to ten interns.

Appendix A

SAMPLE PERFORMANCE OBJECTIVES AND EVALUATION CRITERIA USED FOR FINAL ASSESSMENT OF INTERN'S PERFORMANCE IN CLASSROOM TEACHING

Contents

Reading Objectives 68-71

Educational Psychology Objectives 72-73

Mathematics Objectives 74

Science Education Objectives 75-76

Reading Objectives

Objective	Pass	Fail

1. The intern will demonstrate a knowledge of the nature of the reading process and its various components.
   Criterion Task
   The intern is able to explain and to justify his view of the nature of the reading process.

2. The intern will demonstrate his knowledge of several types of reading approaches and be able to distinguish among them.
   Criterion Task
   Given a list of reading approaches, the intern can list two strengths and weaknesses for each and defend his choice of the best approach.

3. The intern will demonstrate his ability to conduct a directed reading lesson with small groups.
   Criterion Task
   Given a small group of students, the intern will demonstrate his ability to plan, teach, and evaluate two reading lessons. Satisfactory performance will be attained if 75% of the students meet the stated objectives.

4. The intern will demonstrate his ability to use an interest inventory in determining reading interests.
   Criterion Task
   Given a class of students, the intern will administer an interest inventory, summarize the data for the student's records, and indicate two uses for the information obtained.

5. The intern will demonstrate his ability to administer an informal reading inventory and diagnose reading difficulties from its results.
   Criterion Task
   Given three students, the intern will diagnose each student's difficulties by administration of an informal reading inventory and interpretation of its results. Satisfactory performance will be attained if the diagnosis is 90% in accordance with that of the instructor.

6. The intern will demonstrate his ability to utilize standardized tests in diagnosing reading difficulties.
   Criterion Task
   Given the results of standardized tests for a group of students, the intern will diagnose two reading difficulties for each student, indicating the limitations

Pass Fail

of the test scores. Satisfactory performance will be attained if the diagnosis is 90% in accordance with that of the instructor.

7. The intern will demonstrate his ability to diagnose skills in phonics through the use of a skills inventory.
   Criterion Task
   Given a class of students, the intern will select and administer a skills inventory and group the students based on its results. Satisfactory performance will be attained if the instructor concurs with 90% of the placements.

8. The intern will demonstrate his ability to confer with students for diagnostic and evaluative purposes.
   Criterion Task
   Given three students, the intern will conference with each, summarizing the results and indicating one skill in which instruction is needed.

9. The intern will demonstrate his knowledge of the cognitive dimensions of reading, and his ability to diagnose needs in this area.
   Criterion Task
   Given a class of students, the intern will construct an inventory to determine cognitive reading abilities, administer it, and prepare a list of skill groups based on the results. The groupings must be 90% accurate when compared with those of the instructor.

10. The intern will demonstrate his ability to determine reading groups within a classroom.
    Criterion Task
    Given a class of students, the intern will determine appropriate diagnostic tools, administer them, and group the students based on the results. The groups must be in 90% agreement with those determined by the instructor.

11. The intern will demonstrate his knowledge of various learning resources and their uses for teaching reading.
    Criterion Task
    1. The intern will prepare a card file of children's books (20 for primary grades, 10 for intermediate grades). Each card should include bibliographical information, type of book, level of difficulty, vocabulary and skills developed, and questions to be asked.

Pass Fail

2. Given a list of eight learning resources, the intern will be able to suggest two uses in teaching for reading each.
3. The intern will prepare a resource card file (25 cards) of games, devices, or activities to be used in teaching reading. One or more of each should be indicated.

12. The intern will demonstrate his ability to formulate lesson plans based on behavioral objectives, to sequence appropriate learning experiences, and to select appropriate materials for a unit of reading instruction based on his previous diagnosis of the of the abilities of his class.

Criterion Task

Given a class of students and the results of diagnosis of individual reading abilities, the intern will develop detailed lesson plans including behavioral objectives, materials, and procedures (questions, assignments, and activities) for a unit of instruction based on diagnosed needs. Satisfactory performance will be attained if the following criteria are met:

a. 85% of the materials selected are deemed relevant to the objective and appropriate for the abilities of the students by the instructor.
b. procedures are clearly stated and could be carried out by the instructor without further comment.
c. 75% of the students attain the objectives on the criterion test.

13. The intern will demonstrate his ability to use questions based on Bloom and Keathwohl's Taxonomies in group discussions during reading lessons.

Criterion Task

Given three groups of students, the intern will plan and teach a lesson to each including questions from at least three levels of the Taxonomies, 75% of which are open questions. Satisfactory performance will be obtained if analysis of video tapes of each lesson utilizing the TPQI meets stated objectives.

14. The intern will demonstrate his knowledge of materials for determining rate of reading and teaching techniques to improve rate.

Criterion Task

The intern will prepare a series of note cards which have two brief selections at each grade level to be used in testing rate of reading and five techniques to be used in improving rate of reading.

Pass Fail

15. The intern will demonstrate his ability to determine and to keep individual reading records.
Criterion Task
Given a class of students, the intern will select a method of record-keeping and will keep the records for a period of 2 weeks. Satisfactory performance will be attained if the records meet these criteria:
a. diagnosis of individual difficulties is shown.
b. materials used are noted.
c. progress of the individual is shown.
d. new needs of students are indicated.
e. personal contacts with students are listed.

16. The intern will demonstrate an ability to determine readability of materials and individual reading difficulties in content areas and to overcome these difficulties through teaching techniques.
Criterion Task
1. Given a textbook in any area, the intern will select one and estimate readability by applying either the Spacke or Dale-Chall Readability Formulas, whichever is appropriate.
2. The intern will list five techniques for incorporating the teaching of reading in content areas.

17. The intern will demonstrate his ability to utilize diverse instruments to evaluate the attainment of objectives and pupil progress.
Criterion Task
1. Given a list of types of tests, the intern will list two uses for each.
2. Given a unit of reading instruction, the intern will devise, administer, and interpret the results. Satisfactory performance will be attained if the intern can list the names of those students who have met his objectives and the names and areas for reteaching of those students who have not.

Educational Psychology Objectives

Objective	Pass	Fail
1. The intern can demonstrate knowledge of the range of individual differences found among elementary school children at all grade levels. He can describe the changes in growth rate which occur in both boys and girls throughout the elementary years.		
2. The intern can demonstrate his knowledge of the changes in motor and perceptual skills which occur curing the elementary school years so that instructional tasks and expectations can be set at the appropriate levels.		
3. The intern can differentiate behaviors of children which are primarily problems to the teacher from those with possible long-range implications for the welfare of the child.		
4. The intern can demonstrate his ability to work successfully with elementary school children.		
5. The intern can demonstrate skills in motivation, based on recognition of personality needs.		
6. The intern can plan and teach utilizing transfer techniques.		
7. In planning for teaching, the intern will provide for evaluation as a basis for further planning.		
8. The intern can demonstrate ability to interpret and use intelligence test scores as an aid to instruction.		
9. The intern can evaluate, administer, and use the results from standardized achievement tests.		
10. The intern can construct a suitable instrument for assessing the educational progress of a child or a group.		
11. The intern can demonstrate knowledge of the interests characteristic of elementary school children of both sexes and at all grade levels.		
12. The intern can develop and use teaching strategies of two contrasting types: reinforcement and development of insight.		

Classroom Management Objectives

Objective	Pass	Fail
1. The intern will demonstrate a knowledge of district and building policies pertaining to pupil behavior and will be able to apply this knowledge to specific situations.		
2. The intern will be able to recognize and resolve conflicts which arise from discrepancies between school disciplinary policy and the rights of pupils.		
3. The intern will be able to recognize disruptive pupil behaviors. He will be able to prescribe and to demonstrate techniques for dealing with them in specific situations.		
4. The intern will be able to structure situations designed to minimize the potential for disruptive pupil behavior.		
5. The intern will be able to develop and implement classroom policies governing pupil behavior.		
6. The intern will be able to construct schedules of pupil activities which take variables affecting scheduling into account.		
7. The intern will acquire a knowledge of materials available in a building, the required record-keeping procedures, and the housekeeping chores necessary for a classroom to function in an orderly manner.		

Mathematics Objectives

Objective	Pass	Fail
1. Selecting one child who currently seems to be having a moderate amount of difficulty in his mathematics learning, the intern can: a. Define in behavioral terms, the specific objective which he is presently unable to attain. b. State at least three objectives or competencies which are immediate prerequisites to the terminal objective in (a) above. c. Evaluate the child's ability to demonstrate each of these prerequisites.		
2. The intern will diagnose the mathematical needs of an individual learner (see 4) and will prescribe/implement a sequence of instructional activities to meet at least one of the learner's diagnosed needs.		
3. The intern will plan/implement a drill and practice exercise for a group of learners.		
4. Given a set of mathematics learning needs for a group of learners, the intern will prescribe/implement learning activities for a sequence of at least three objectives.		
5. Given a mathematical concept to be learned by a group of learners, the intern will plan and implement an inductive sequence of learning activities which result in the concept being generalized by members of the group. The strategy for this sequence will be one of guiding the learner to discovery of the concept.		
6. Given two small groups of learners with different learning needs, the intern will prescribe a sequence of mathematics activities for each group and will implement these sequences simultaneously.		

Science Education Objectives

Objective	Pass	Fail

Overall Behavioral Objective

Considering ones own characteristics and behaviors, as well as each pupil's, the intern will prepare and present a series of science lessons incorporating these materials, media, and possible instructional means deemed necessary or appropriate in order to arrive at expected student outcomes.

1. The intern will, through reading, discussion or media, identify those individuals whose work has influenced the philosophies and/or teaching strategies of science instruction at the elementary school level. Such a list of individuals might include:

Piaget	Skinner	Magor
Bruner	Flanders	Bloom

2. Depending upon the materials and instructional means to be used in a series of science lessons, the intern will include these attributes which contribute to successful lesson planning.
   1. Instructional means might take the form of:
      Programmed instruction
      Individualized instruction
      Team teaching
      Inductive or deductive teaching
      Computerized instruction
      Traditional
   2. Such attributes might include:
      Pre-activity - activity and Post-activity periods.
      Questioning techniques
      Motivation and reinforcement
      Psycho-motor skills
      Expected student outcomes or outcomes stated in behavioral objective terms.

3. Upon evaluation of instructional materials available in elementary science the intern will incorporate in his lessons these materials which are most adaptable in meeting the needs of the classroom environment which he finds himself in. Choosing topics in sicence the intern knows best or feels most comfortable with will, in the beginning, undoubtedly offer more success from a teaching as well as a learning standpoint.
   Materials to be investigated will include:
      Newer Curricula such as AAAS, ESS, and SCIS
      Textbooks
      Kits such as SRA or textbook material kits.

Pass Fail

Outdoor educational Programs - Kitsap School District - Washington
Outside reading sources - Reader's Digest Science Series, Ranger Rick's Nature Magazine, and Nature and Science Magazine.

4. In line with instructional materials, the intern will, whenever appropriate, make use of or construct audio-visual material which will serve to reinforce the objectives of each lesson.

5. In planning lessons the intern will take into account any differences in pupil characteristics and behaviors. In truly meeting individual needs, anticipation of any difficulties and a willingness to take alternative steps should be foremost in one's mind.

6. The intern will construct or use available instruments in the evaluation of expected student outcomes. It has been found, as a rule, that standardized tests are not effective measures for those children who have gone through many of the newer curriculum programs already developed or being developed today. Therefore, care should be taken in the choice of evaluative tools.
Evaluative Instruments might include:

Teacher made tests	Standardized tests
STEP Science Test	TAB Science TEST
Anecdotal tests	

7. In order to keep abreast with trends in elementary science instruction the intern will read current research and articles dealing with this topic.
Special Attention might be given to:
Eric Report, An Analysis of Research Related to Instructional Procedures in Elementary School Science, Science and Children: 25-36; April 1969.

Review of Educational Research, Science and Mathematics Education, October Vol. 35 No. 4, 1969.

8. The intern will demonstrate originality be designing a lesson or series of lessons on a topic not typically found in science material published today. Such lessons, to be objectively met, should take into account any prerequisits learning essential to the development of the concepts to be presented.